

# INDEX.

Illustrated articles indicated by \*.

## A.

- Abraham, A., Special nickel, chromium and silicon steels, Feb 2, p 6; Feb 9, p 10
- Acetylene:  
Carbide and acetylene in factories, Feb 23, p 3  
Niagara Falls plant, Apr 27, p 9
- Acheson, E. G., Manufacture of graphite, June 8, p 6
- Acheson Graphite Company, Feb 9, p 2
- Adams, C. C., Address of, Mar 23, p 43; Apr 20, p 40
- Adriance inclinable open back press, Mar 30, p 1\*
- Advertising:  
Attractive booklet, May 18, p 48  
Bush advertisement, May 11, p 43\*; June 29, p 43  
Cuts, Cheap method of making, June 15, p 43\*  
Does it pay retailers? May 11, p 42; May 18, p 48  
Effective display, June 8, p 47  
False advertising in Minnesota, Apr 27, p 40  
Florida merchant's idea, May 25, p 48  
Paper by C. M. Dorse, Feb 16, p 52  
Specimen ads, June 15, p 43  
Suggestions by G. M. Evenson, May 4, p 42  
Trade catcher, Apr 20, p 38\*  
Trade winning methods, May 4, p 42; May 11, p 42; May 18, p 48; May 25, p 48; June 8, p 47; June 15, p 43; June 29, p 43  
Unique pamphlet, Jan 19, p 39 (See also Window display.)
- Advertising prize competition, *The Iron Age*, June 29, p 43
- Africa, Trade in the French colonies, Jan 19, p 5
- Air compressors:  
Compound two-stage, May 25, p 1\*  
Fairbanks-Morse gasoline, June 29, p 12\*  
Lane & Bodley, Bennett-Corliss, Jan 19, p 10\*  
Mammoth, for street railroad motors, June 8, p 1\*  
Worthington water motor, Mar 16, p 9\*
- Air pump, Manistee, Apr 27, p 1\*
- Ajax bolt heading machine, June 29, p 7\*
- Alabama Steel & Shipbuilding Company, May 25, p 16\*
- Albree, C. B., The use, design and manufacture of iron in ornament, Apr 27, p 3\*
- Aldrich, C. W., The upbuilding of retail hardware trading, Feb 16, p 54
- Alloys, Testing, by Joseph Richards, May 11, p 12
- Aluminum:  
Technology of aluminum from a British standpoint, Apr 6, p 15  
Weight of aluminum sheets, Mar 30, p 34  
Aluminum hollow ware, June 1, p 44\*
- Amalgamated Association:  
Annual convention, May 18, p 6  
Scale, May 25, p 13
- American Axe & Tool Company, Feb 2, p 51
- American Bicycle Company, June 29, p 46
- American Brass Company, Mar 9, p 36; Mar 16, p 31
- American Car & Foundry Company, Feb 9, p 20; Mar 30, p 34; June 1, p 15
- American Car Supply Company, May 4, p 30
- American Copper Company, Mar 16, p 32
- American Foundrymen's Association, Apr 20, p 1; May 11, p 4, 34; May 18, p 24; May 25, p 19
- American Institute of Mining Engineers, Mar 2, p 3
- American Iron & Steel Works, May 25, p 7
- American management, labor and resources, May 4, p 4
- American Plumbers' Supply & Lead Company, June 8, p 29
- American Radiator Company, Feb 16, p 30
- American Railway Equipment Company, May 25, p 29
- American Screw Company, Jan 12, p 50; Mar 2, p 43
- American Ship Building Company, Mar 23, p 35; Mar 30, p 31; Apr 20, p 28; Apr 27, p 2
- American Smelting & Refining Company, Apr 13, p 30
- American Society of Mechanical Engineers, Apr 20, p 2; May 11, p 20; May 18, p 13
- American Steel & Wire Company, Jan 12, p 40; Jan 19, p 20; Jan 26, p 33; Feb 9, p 31; Feb 16, p 18; Mar 23, p 15; May 4, p 31  
Charter, Jan 19, p 18  
Officers, Mar 23, p 15\*
- American Steel Hoop Company, Mar 30, p 31; Apr 13, p 30; Apr 20, p 28; Apr 27, p 32; May 18, p 21
- American Tin Plate Company, Jan 19, p 19; Feb 9, p 29; Feb 16, p 17
- American twist drill grinder, June 1, p 9\*
- Annealing malleable cast iron, Silicon in, Feb 16, p 2; Feb 23, p 4; Mar 9, p 16; Mar 23, p 14; Mar 30, p 18
- Anvil, Making solid wrought iron steel, May 11, p 3\*
- Arbitration in Illinois, May 4, p 17
- Arcade Mfg. Company, Freeport, Ill., Jan 5, p 47; Jan 19, p 43
- Argentine Republic, Metals and manufactures in, Mar 23, p 7
- Armor plate:  
Bids, June 1, p 19; June 8, p 4; June 15, p 8  
Krupp process, Mar 2, p 17; May 25, p 41  
Nickel steel patents, Feb 9, p 8  
Tests of, Mar 16, p 14; May 25, p 41
- Army contract policy, New, June 29, p 5
- Arsenic, Influence of, on the mechanical properties of steel, Apr 13, p 5
- Asbestos production, May 11, p 18
- Ashland Steel Company, Feb 9, p 16, Sup.; Mar 16, p 34
- Asphalt streets, Breslau, Cleaning, Mar 9, p 33
- Athara bridge and standardization, Mar 23, p 23; Apr 27, p 14
- Australian axe and saw competition, May 25, p 47
- Australian freight rates, Feb 2, p 51
- Automobiles, (See Motor vehicles.)
- Avery Stamping Company, June 1, p 41
- Axe, Marble's safety pocket, Mar 16, p 47\*
- Axe and saw competition in Australia, May 25, p 47
- ## B.
- Baackes, Frank, Mar 23, p 18\*
- Baird engine lathe, June 1, p 12\*
- Baker, J. F., Address of, Mar 2, p 47
- Baker, J. W., Consolidation of stove makers, May 18, p 38
- Balance, Hase chemical, Feb 23, p 11
- Ball bearing sheave, Wilcox, Feb 2, p 16\*
- Bangs, H. C., Address of, Mar 23, p 42
- Banking reform, Apprehension regarding, Mar 30, p 17
- Bankruptcy law, Apr 6, p 9
- Bar iron, Suggested improvements in the manufacture of, May 25, p 14
- Bar iron consolidation, Mar 9, p 15; 16, p 18; Apr 6, p 18; 13, p 30; 20, p 28; 27, p 18; May 4, p 31; June 1, p 16
- Barbour, G. H., Address, June 22, p 50
- Barnes, C. N., Address, Feb 23, p 35
- Bateman Mfg. Company, Jan 19, p 46
- Bathroom fixtures, Meriden Bronze Company, Mar 30, p 47; Apr 20, p 53
- Beaman & Smith, New works, Feb 23, p 6\*
- Bearings:  
Dodge capillary, chain and ring oiling, Feb 23, p 11\*  
Hyatt roller bearing, Feb 23, p 12  
Philadelphia ring oiling, Feb 9, p 3\*  
Spiral journal, Mar 9, p 4\*
- Becker-Brainard Milling Machine Company, Feb 2, p 22
- Belgium hardware trade, May 25, p 47
- Belknap, W. R., Passing of the personal in business, June 1, p 39
- Bell, Daisy call bell, May 11, p 46\* (See also Bicycle bells.)
- Bell Bros, a stock company, Feb 9, p 7
- Bellaire Steel Company, Ohio, Jan 12, p 21, 33; 19, p 20
- Belt conveyor, Robins, Apr 20, p 12\*
- Belt fasteners, Crescent, Mar 16, p 47\*
- Belt hooks, Chicago, Feb 2, p 62\*
- Belt lacing, Bristol's steel, Feb 2, p 58\*
- Belts, Endless silk sewed, May 4, p 49
- Bentley, F. T., Mar 23, p 21\*
- Bertsch universal plate shear, Jan 5, p 17\*
- Bessemer road, May 11, p 8
- Bethlehem plate mill, Removal of, Jan 12, p 18
- Bethlehem Steel Company, Apr 27, p 13
- Bicycle bells:  
Intaglio design, Apr 20, p 53  
Mossberg tire bell, Feb 2, p 61\*; Apr 6, p 47\*
- Bicycle chain, King, Apr 20, p 58\*
- Bicycle chain adjustment, Feb 23, p 48\*
- Bicycle crank, Scheeren's jointed, Feb 16, p 59\*
- Bicycle crank hanger, National, Feb 2, p 62\*
- Bicycle cyclometer, Veeder, Feb 16, p 58\*
- Bicycle exhibition, New York City, Jan 19, p 43; Feb 2, p 47
- Bicycle handle bar binder, Jan 26, p 50
- Bicycle hangers, Springfield, Feb 2, p 56
- Bicycle holder, Lawn, Jan 19, p 46\*
- Bicycle hubs:  
Keene direct spoke, Jan 26, p 50\*  
National, Apr 6, p 50\*
- Bicycle lamps:  
Arc light acetylene, Mar 2, p 57\*  
Automatic acetylene, Jan 26, p 51\*  
B. & R. acetylene, Mar 9, p 47\*  
Brilliant acetylene, Feb 16, p 60\*  
Bundy, Apr 6, p 50\*  
Crescent acetylene, Mar 30, p 49\*  
Gem acetylene, Feb 9, p 52\*  
Lancaster acetylene, Mar 23, p 51  
Long beam acetylene, Mar 2, p 58\*  
Majestic acetylene, Jan 5, p 50\*  
Searchlight gas, Feb 16, p 60\*  
Simplex automatic gas, Mar 2, p 58\*  
Solar acetylene, Jan 19, p 47\*
- Bicycle pedal, S. & G. combination, Mar 16, p 48\*

## Bicycle pumps:

- Bridgeport, Feb 23, p 48\*  
 M. & W. combination, Apr 27, p 46\*  
 Peters & Drake hand lever, Feb 23, p 48\*

Bicycle repair outfit, Glidden metallic, Jan 5, p 53\*

Bicycle seat post, Climax, Apr 6, p 44\*

Bicycle spoke threader, Peck, Feb 2, p 57\*

## Bicycle sundries:

Bridgeport Brass Company, Apr 6, p 44

Miller & Co., Feb 16, p 58

Bicycle tire inflator, Union automatic, Jan 26, p 50

Bicycle tire valve, No-stem safety, Jan 12, p 54\*

Bicycle tires, Dynamometer for testing, Mar 9, p 12\*

Bicycle toe clip, Ashworth, Feb 9, p 51\*

Bicycle wheels, Chainless, Bevel gear blanks for, Feb 2, p 62\*

## Bicycles:

Hudson, Feb 9, p 49

Imperial, Jan 26, p 53\*

Monarch, 1899, May 25, p 52\*

Remington, Mar 9, p 47

Wolff, Feb 9, p 49; 23, p 50\*; May 4, p 46

Bill, Old hardware, May 4, p 46

Birkinbine, John, The basis of the iron industry, Jan 12, p 6

Birmingham Cement Company, Mar 30, p 34

## Bishop, H. H.:

Address at Philadelphia, Jan 26, p 40

Avenues of trade, Mar 2, p 48

Bit brace, Ball bearing ratchet, Making of, Jan 5, p 1\*

Blair, William, Death, May 18, p 49

Blaisdell standard lathe, Feb 16, p 1\*

Blast furnace consolidation, Virginia, Jan 12, p 30; 19, p 20; 26, p 32; Mar 2, p 15; Mar 16, p 7

Blast furnace gas for production of power, June 22, p 6, 19

## Blast furnaces:

Building of, June 8, p 20

Compared with cupola practice, May 11, p 4

Destruction of copper tuyere, Feb 16, p 13\*

Filling apparatus, Kennedy, June 29, p 8\*

Wellman open hearth, May 25, p 16\*

Bliss, E. W., & Co.:

Armature disk press, Apr 13, p 8\*

Inclinable power presses, Mar 9, p 1\*

Press with electric motor, Feb 9, p 13\*

Bogy, Ben, oldest hardware traveler, Jan 12, p 45\*

Boiler plates, Large, Mar 16, p 15

## Boilers:

Explosions, Investigations of, May 11, p 14

Furnace efficiency, May 18, p 13

Hutchinson sectional vertical tube, Jan 19, p 4\*

Lynn water tube, May 18, p 11\*

Marine feed water regulators, Mar 16, p 6\*

Standard testing methods, May 11, p 20

Bolles Iron & Wire Works, May 25, p 51

Bolt and nut plants consolidate, May 4, p 31

Bolt heading machine, Ajax, June 29, p 7\*

## Bolts:

Bolts and nuts in England, Jan 19, p 3

Seaman expansion, Mar 23, p 49\*

Weights of carriage bolts, Apr 13, p 37

## Book reviews:

American Trade Index, Jan 12, p 33

Benner's Prophecies, Feb 16, p 14

Business Atlas and Shippers' Guide, Mar 23, p 11

Dill on New Jersey Corporations, Feb 16, p 14

Elements of Trigonometry, H. C. Whitaker, Feb 16, p 14

Handbook of Engineering, Laboratory Practice, R. A. Smart, Feb 16, p 14

## Book reviews (Continued):

Hardware Store Business Methods, Apr 13, p 39

Iron Making in Alabama, W. B. Phillips, Mar 23, p 11

Metric System, Hartford Steam Boiler Inspection & Insurance Company, Feb 16, p 14

Books for an iron and steel works' chemist, June 15, p 9; 22, p 29; 29 p 15

Boom of 1879-80, Mar 23, p 12

Boring holes near together, Mar 9, p 5\*

Boynton, C. T., Mar 23, p 18

Brake, Steamship, Mar 16, p 15

Brammer Mfg. Company, June 1, p 43

Brass companies consolidate, Mar 9, p 36; 16, p 31

Brass melting furnaces, Construction of, May 25, p 20

Brass *vs.* sheet steel, Mar 30, p 19; Apr 6, p 34

Brazer, Enterprise perfection gas, Jan 12, p 53\*

## Brazil:

American trade opportunities, Feb 16, p 9; Apr 27, p 12

Iron works and other industries, June 1, p 7

Brick, Vrooman furnace arch, Feb 9, p 5\*

Bridge builders and the prices of materials, June 1, p 2

Bridge builders' consolidation, Feb 2, p 23

## Bridges:

Athara bridge and standardization, Mar 23, p 23; Apr 27, p 14

East River, N. Y., Feb 9, p 31; Feb 23, p 19

British Columbia mineral output, May 18, p 2

Brooms, Hendee wire, Mar 2, p 56

Brown, W. L., Interview with, on Chicago's position in the iron trade, Feb 2, p 15

Brown Hoisting & Conveying Machine Company:

Cantilever crane, June 22, p 1\*

Electric overhead tram rail, Jan 19, p 1\*

Brown pyrometer, Apr 6, p 10\*

Brushes, Economy wire wheel, Apr 6, p 45\*

Buckets, Steel elevator, Feb 2, p 60\*

Buffalo Steel Company, Apr 27, p 33; May 11, p 8\*

## Buildings:

Equipment of tall office buildings in New York, May 18, p 15

Phelps-Dodge Building and its tenants, May 18, p 18

Bullet, Ideal, Feb 9, p 51\*

Bullock Electric Company's new plant, May 4, p 3

Bunsen cells modified, Feb 16, p 2

Burditt & Williams' exhibit, Jan 12, p 50

Burr portable shaft key seater, Apr 6, p 12\*

Bush Hardware Company's advertisement, May 11, p 43; 18, p 48

Business, Modern concentration of, Feb 23, p 38

Business cards, Jan 26, p 8; Feb 9, p 20

## Business methods:

Cash business, Jan 19, p 35; Mar 9, p 42

Discussion in Missouri, Apr 20, p 44

Helping out dull seasons, Apr 13, p 40

How a novelty was marketed, Apr 6, p 42

"Never ready" people, Jan 19, p 43

Upbuilding of retail hardware trading, Feb 16, p 54

(See also Advertising; Hardware merchants.)

## Business situation:

A welcome lull, Apr 20, p 15

Growing demand for goods, May 18, p 19

Inflation and contraction, Mar 30, p 16

Machinery builders crowded, June 22, p 17

Speculation in industrial stocks, Jan 26, p 19; Apr 13, p 15; June 8, p 15, 30

## Business situation (Continued):

Standards of comparison changing, Jan 26, p 18

What will check the demand? Mar 16, p 17

(See also Finance.)

Butcher saw blades in coils, May 4, p 49

## C.

Cables, Paper wrapped, Mar 2, p 14

Calcium carbide and acetylene in factories, Feb 23, p 3

Calcium carbide plant, Niagara Falls Power Company, Apr 27, p 9

California Retail Hardware Dealers' Association, Jan 12, p 46; 19, p 41; Feb 23, p 43

Caliper gauge, Billings', Jan 19, p 48\*

Calk, Kinnear ice, Mar 2, p 55\*

Calumet & Hecla Mining Company, Coal hoists of, Jan 5, p 12\*

Cambria Steel Company, Mar 30, p 19

Can faucet, Litchfield, Feb 16, p 58\*

Canada, Our trade relations with, June 1, p 38

## Canadian notes:

Abbott-Mitchell Iron & Steel Company, Feb 23, p 15

Blast furnace for Toronto, Apr 20, p 29

Bounties, Iron and steel, June 8, p 11; 15, p 5; 22, p 19

Canadian Inland Transportation Company, Apr 20, p 29

Cape Breton iron works, Feb 16, p 10

Deseronto smelting works, Feb 9, p 6

Dominion Steel & Iron Company, Mar 23, p 6

Exporting charcoal iron, Apr 20, p 29

Fuel oil, Mar 23, p 6

Furnace and rolling mills amalgamation, Apr 20, p 29

Hamilton Blast Furnace Company, Jan 19, p 13

Locomotive works at Ottawa, Feb 9, p 7

Machinery tax, Apr 13, p 20

Metropolitan Power Company, Apr 20, p 29

Midland, Ont., as an iron center, Feb 23, p 15

Midland charcoal iron furnace, Feb 16, p 10

Niagara power franchise, Feb 23, p 15

Nova Scotia steel shipbuilding scheme, Mar 30, p 12

Ontario iron production, Apr 13, p 20

Ontario Mines Act, Amendment proposed, Mar 30, p 12

Quebec anti-bonus bill, Feb 16, p 10

Toronto as an iron center, Mar 23, p 6

## Cans:

Garbage, Apr 20, p 56\*

Milk, Feb 23, p 47

Capitaine, E., New Method of boring, milling and tapping machine frames by use of templates, Jan 26, p 3\*

Capitaine petroleum engine, Mar 9, p 8\*

Capitalizing our supremacy, Feb 16, p 16

Capper, Common sense re and de, May 11, p 47\*

Car axle manufacture at Homestead, Apr 27, p 18

Car trucks, Compressed air, May 4, p 1\*

Carbide holders, Portable, June 15, p 47

Carbide of silicon, June 22, p 5

Carbon, Determination of, in iron and steel without combustion apparatus, May 11, p 30

Carlin four-spool erectors' engine, Mar 16, p 13\*

Carload, What is a? Feb 23, p 40

Carnegie, Andrew, Retirement, May 11, p 16

Carnegie interests, May 11, p 27; 18, p 27; 25, p 42c

Carnegie Steel Company, Feb 9, p 29, 31; 23, p 29; Mar 23, p 2; 30, p 15; Apr 6, p 31; 27, p 18; June 29, p 32

Carpenters and builders, Trade with, May 11, p 42

Carpet fastener, Zenith, Apr 13, p 46\*

Carpet whip, Preston braided wire, Apr 6, p 47\*

Carriage bolts, Weights of, Apr 13, p 37  
 Carriage heater, Clark, Feb 2, p 58\*  
 Carriage odometer, U. S. Mfg. Company, Jan 5, p 50\*  
 Carrier, Jeffrey traveling freight, Feb 2, p 12\*  
 Cars, Steel, in wrecks, May 25, p 18  
 Carving set, Mammoth, June 29, p 50\*  
 Cash business, Jan 19, p 35; Mar 9, p 42  
 Cash recorder, Security, Mar 9, p 51\*  
 Cast borings in foundries, How to use, Feb 2, p 9  
 Cast iron, Malleable, Feb 16, p 2; 23, p 4; Mar 9, p 16; 23, p 14; 30, p 18  
 Cast iron pipe combination, Feb 9, p 22; Mar 30, p 31; Apr 13, p 8; May 4, p 13  
 Casting machine, Heyl & Patterson, May 18, p 1\*  
 Castings:  
 Artistic iron, Mar 2, p 3  
 Coke and charcoal iron for malleable, Mar 30, p 30; Apr 6, p 5  
 Catalogue cabinet, Leonard, Mar 30, p 43\*  
 Catalogue houses, Policy of merchants with reference to, Jan 19, p 42  
 Catalogue making, A new feature in, Apr 13, p 42  
 Cattaraugus Cutlery Company, Jan 19, p 37  
 Cement, Illinois steel Portland, Mar 9, p 5  
 Central American news, Feb 16, p 7; Mar 23, p 5  
 Central Stamping Company, Jan 12, p 46  
 Central steam condensing plants, Apr 20, p 3\*  
 Chalfant, J. W., Portrait of, Jan 5, p 21  
 Chambers, B. F., How to use cast borings in foundries, Feb 2, p 9  
 Chaplin automatic handle lathe, Feb 2, p 9\*  
 Charcoal iron making in Ontario, June 29, p 18  
 Chatillon, John, & Sons, Apr 13, p 41  
 Checks, Exchange on out of town checks, Apr 13, p 17; 27, p 19; June 15, p 38  
 Chicago Belt Railway Company industrial locations, Mar 16, p 7  
 Chicago House Wrecking Company, Mar 9, p 11  
 Chicago Pneumatic Tool Company, Jan 12, p 2  
 Chicago Retail Hardware Dealers' Association, Feb 9, p 37, 40; June 8, p 38  
 Chicago Ship Building Company, May 25, p 1  
 Chicago Time Register Company, Apr 27, p 14  
 Chicago Wheel & Mfg. Company, Feb 2, p 56  
 Chimney, Moving steel chimney, Jan 19, p 11  
 Chimney cap, Everlasting, Feb 23, p 48\*  
 Chinese trade, American manufacturer's view, Mar 30, p 41  
 Chisholm, S. H., Mar 23, p 17\*  
 Chuck jaws, Sweetland reversible, May 11, p 13\*  
 Chucks:  
 National skeleton drill, Feb 2, p 14\*  
 Pratt positive driving drill, Feb 2, p 13\*  
 Church, G. W., Mar 9, p 44  
 Churn, Ocean, June 15, p 47\*  
 Cincinnati Axle Company, Mar 30, p 29  
 Cincinnati radial drill, May 11, p 11\*  
 Clamp, Sherman hose, Jan 5, p 53\*  
 Clark, J. L., June 15, p 41\*  
 Clark, J. W., Address, Feb 16, p 37  
 Clark, J. W., and the Spalding policy, June 15, p 39  
 Cleaning asphalt streets, Breslau, Mar 9, p 33  
 Clifford, Alfred, Mar 23, p 9\*  
 Clinton Wire Cloth Company, Apr 6, p 41  
 Clipper, Hotchkiss ball bearing, Jan 12, p 52\*  
 Clips, Cooper's all wrought, Jan 26, p 54\*  
 Clock base, Unique, June 22, p 54\*

Clothes line hooks:  
 Handy, Apr 20, p 58\*  
 Holdfast, Apr 13, p 45\*  
 Clutch, Orton friction, for small power, Mar 2, p 5\*  
 Coal:  
 Production in 1898, June 1, p 13  
 Soft, Smoke nuisance, June 15, p 18  
 Coal companies combine, June 22, p 5  
 Coal hoists, Calumet & Hecla Mining Company, Jan 5, p 12\*  
 Coal mining, Machines in, June 29, p 17  
 Coaling station of Erie Railroad, Apr 13, p 1\*  
 Coke and charcoal iron for malleable castings, Mar 30, p 30; Apr 6, p 5  
 Coke iron versus charcoal iron and its future ability to compete, Feb 16, p 16  
 Coke workers' wages advance, May 14, p 29  
 Colby, A. L., Best books for an iron and steel works chemist, June 15, p 9; 22, p 29; 29, p 15  
 Cold Rolled Shafting Manufacturers' Association, Apr 13, p 33  
 Colonial Iron Company, May 25, p 41  
 Colonies, Need of, to help trade, Mar 2, p 20  
 Colorado freight suit, Apr 13, p 4  
 Columbia Automobile Company, May 4, p 29  
 Columbia Iron & Steel Company, Sale of, Feb 16, p 18  
 Commerce, (See Export trade; Trade.)  
 Comparometer, Stupokoff, Apr 6, p 14\*  
 Compressed air street car truck, May 4, p 1\*  
 Conditional nature of patent property, Apr 13, p 13  
 Consolidated Smelting & Refining Company, Mar 9, p 32  
 Consolidations, (See Trusts; also, Brass; Copper; &c.)  
 Consuls and our foreign trade, Jan 12, p 12; Apr 13, p 16  
 Continental Coke Company, May 18, p 6  
 Cook, E. S., Blast furnace compared with cupola practice, May 11, p 4  
 Cooling tower and condenser installation, Feb 2, p 1\*  
 Cope, G. W., The Chicago iron trade in 1898, Jan 5, p 8  
 Copper:  
 Boom in trade, Jan 19, p 16  
 Lake district, Jan 19, p 30  
 New Lake explorations, May 18, p 3  
 Weight of copper sheets, Mar 30, p 34  
 Copper companies consolidate, Mar 16, p 32  
 Copper plating vessels, Feb 23, p 1\*  
 Cord, Fiber seaming, Feb 23, p 50\*  
 Cork screws:  
 Clough, Jan 26, p 50\*; April 13, p 44  
 Williamson, Apr 20, p 58\*  
 Corn huskers:  
 Milwaukee, Mar 2, p 57  
 Wilcox-Lillie, Feb 23, p 49\*  
 Corn planter, New Departure rotary, Apr 20, p 56\*  
 Crane, A. M., Mar 23, p 20\*  
 Crane Company, Chicago, Jan 12, p 21  
 Cranes:  
 Brown cantilever, June 22, p 1\*  
 Brown electric traveling, Jan 19, p 1\*  
 Pneumatic, June 1, p 5\*  
 Crimping machine, Rudolphi & Krummel, Mar 30, p 8\*  
 Crompton, W. H., Shear Company, Apr 6, p 44  
 Cuban tariff, Jan 5, p 18  
 Currency, (See Finance.)  
 Curry comb, Baker, Mar 9, p 49\*  
 Cutter rack, Harrington folding, May 4, p 7\*  
 Cutting off machine, Lucas & Gliem, Jan 19, p 13\*  
 Cycle path and sidewalk machine, June 22, p 52\*  
 Cyclometers, New Departure security, May 4, p 52\*  
 Cylinder, Red Jacket brass lined, Mar 9, p 47

## D.

Daimler Mfg Company, June 8, p 30

Dale, Sir David, Industrial conciliation in England, Mar 23, p 3  
 Dallett duplex boiler shell drill, June 1, p 1\*  
 Daly, Charles, Death of, Jan 19, p 36  
 Daniels, F. H., Mar 23, p 18\*  
 Danielson Machine & Tool Company, May 4, p 7  
 Davis, G. C., The malleable iron industry: Its development in the United States, Feb 9, p 14  
 Davis, S. M., Address, Feb 23, p 43  
 Davis key seater, May 25, p 8\*  
 Dean Bros. pressure and speed governor, June 1, p 4\*  
 Decade of progress in reducing costs, Mar 2, p 6  
 Defiance Machine Company, May 18, p 7\*; June 29, p 11\*  
 Dempsey Mfg. Company, May 11, p 47\*  
 D'Esté & Seeley pressure regulator, May 25, p 6\*  
 De Vol, P. C., Address, Feb 16, p 45  
 Diamond State Steel Company, May 4, p 6  
 Die sinkers' flexible drilling, grinding and polishing machine, Feb 2, p 13\*  
 Disston, Henry, & Co., Mar 9, p 40; June 22, p 37  
 Dixon, Walter, American management, labor and resources, May 4, p 4  
 Dodge capillary, chain and ring oiling bearings, Feb 23, p 11\*  
 Dominion Steel & Iron Company, June 29, p 17  
 Door catch, Automatic, Jan 12, p 51\*  
 Door hangers:  
 Fire door, Apr 27, p 44\*  
 Gardner ball bearing, Feb 2, p 57\*  
 Lane elevator, Feb 23, p 49\*  
 Le Roy noiseless, Jan 5, p 54\*  
 Door hinges, Olympia non-holdback spring, Feb 2, p 59\*  
 Door holder, Fairy, May 18, p 53\*  
 Door key, White's Universal, Mar 9, p 48\*  
 Door knob, Victor screwless, May 4, p 49; 11, p 46\*  
 Door set, Fortuna design, June 15, p 48\*  
 Dougherty, G. T., Determination of carbon in iron and steel without combustion apparatus, May 11, p 30  
 Doxsee, C. M., Advertising, Feb 16, p 52  
 Drawback rates, Jan 16, p 17  
 Dredge built for Russia, Mar 16, p 11  
 Drilling machines:  
 Champion improved, June 1, p 46\*  
 Cincinnati radial, May 11, p 11\*  
 Dallett duplex, June 1, p 1\*  
 Die sinkers' flexible, Feb 2, p 13\*  
 York post radial, Mar 2, p 14\*  
 Drillings, Standardized, May 11, p 17  
 Dust cloth holder, Handy, Apr 6, p 45\*  
 Dynamometer for testing bicycle tires, Mar 9, p 12\*  
 Dynamos:  
 Direct connected, Standards, May 11, p 21  
 Gas engines for, Jan 26, p 6\*  
 Mayer dynamos, Apr 20, p 13\*  
 Nash direct connected, Mar 30, p 11\*

## E.

Eagle Horse Shoe Company, Feb 23, p 47  
 East River Bridge, N. Y., Bids for towers and end spans, Feb 9, p 31; 23, p 19  
 Eaton, Cole & Burnham Company, Mar 23, p 47  
 Eaves trough hanger, Yankee improved adjustable, Apr 13, p 44  
 Economy in small power, Apr 6, p 8  
 Edenborn, William, Mar 23, p 16\*  
 Egan Mfg. Company:  
 Automatic oil cup, Mar 30, p 5\*  
 Inverted valve steam trap, Apr 6, p 12\*  
 Egg beaters:  
 Dover, Jan 19, p 48\*  
 Standard, Apr 20, p 54\*  
 Egg tester, X-Ray, May 25, p 52\*  
 Eight-hour labor bill, Feb 9, p 6; 23, p 13

- Ejector, Automatic chemical, Feb 23, p 47\*
- Electric arc burning, Steel girders, Mar 30, p 3
- Electric fans, Sturtevant, Jan 19, p 9\*; Feb 9, p 9\*
- Electric light, Nernst, Mar 9, p 18
- Electric motors:  
Direct current stationary, Feb 16, p 5\*
- Mayer motors, Apr 20, p 13\*
- Sturtevant bi-polar, Apr 27, p 13
- Electric vehicles, (See Motor vehicles.)
- Electrical industries in 1898, Jan 5, p 5
- Electricity in engineering works, Use of, Jan 12, p 13
- Electrolytic galvanizing, Jan 26, p 17; Feb 2, p 26
- Elevator, Plunger direct acting hydraulic, Jan 19, p 7\*
- Ellwood, I. L., Mar 23, p 17\*
- Emery wheel dresser, Huntington, Feb 2, p 56
- Empire Steel & Iron Company, Apr 13, p 29
- Enameled ware patent litigations, Feb 23, p 46; Mar 30, p 45
- Enameled ware situation, Jan 26, p 47
- Enameling as an industry, Mar 23, p 10
- Engineers' Society of Western Pennsylvania, Mar 30, p 15
- Engines:  
Capitaine petroleum, Mar 9, p 8\*
- Filer & Stowell heavy cross compound Corliss, Jan 12, p 1\*
- German rolling mill, June 8, p 8\*; 15, p 6; 22, p 8\*
- Hoisting engines, Mar 9, p 7\*; 16, p 13\*
- Marine, New cruisers, May 18, p 12
- Mietz & Weiss kerosene, Mar 2, p 1\*
- Pumping engines, Mar 30, p 9; Apr 27, p 1\*
- (See also Gas engines.)
- England's foreign trade and our own, Mar 16, p 16
- Ensley Land Company, Mar 30, p 5
- Enterprise Mfg. Company, Excursion to works, June 22, p 37
- Erectors' engine, Carlin four-spool, Mar 16, p 13\*
- Erie Railroad, New coaling station, Apr 13, p 1\*
- Europe, Trade conditions, June 29, p 42
- Expenses of jobbers' salesmen, June 15, p 40; 22, p 37
- Explosives, High, in guns and shells, Feb 23, p 8
- Export trade:  
Consuls and our foreign trade, Jan 12, p 12; Apr 13, p 16
- England:  
Compared with United States, Mar 16, p 16
- Iron and steel, Feb 16, p 6
- Locomotives, 1898, Feb 16, p 6
- High prices killing trade, Apr 13, p 39
- Iron and unwrought steel, Feb 2, p 14; 16, p 15
- Ocean shipping and the export trade, Jan 12, p 3
- Points in regard to trade, Jan 26, p 46
- Solicitude for, Apr 13, p 15
- United States as an export country, Jan 5, p 21a; Mar 16, p 16; June 22, p 46
- (See also Iron trade.)
- Express charges, Jan 12, p 47; Feb 2, p 46; Apr 13, p 41
- F.**
- Fable: The condemned razor, June 29, p 49
- Fairbanks-Morse gasoline air compressor, June 29, p 12\*
- Faries Mfg. Company, Apr 13, p 44
- Farm implement trade, June 1, p 17; 8, p 17
- Farmer and industrial progress, Apr 6, p 16
- Farmer combination lathe and grinding tool, Mar 16, p 1\*
- Farquhar, A. B., Trade, trusts and tariffs, June 15, p 13; 22, p 16, 18
- Farquhar pulley molding machine, Mar 9, p 11\*
- Faucet, Straight way, Jan 5, p 52\*
- Fawcett, Waldon, Shipping on the Great Lakes and the iron trade, May 4, p 8
- Federal Steel Company, Mar 30, p 19
- Feed water regulators on the British ship "Pactolus," Mar 16, p 6\*
- Fences:  
Clinton electrically welded, Mar 16, p 46\*
- Dwiggin's wire, Mar 9, p 48\*
- Keystone lawn fencing, May 4, p 51\*
- Kilmer wire, Jan 19, p 47\*
- Kitselman ornamental, Apr 20, p 53
- Royal woven wire, May 4, p 51\*
- Sterling woven wire, Jan. 12, p 54\*
- Ferracute Machine Company, Jan 19, p 2
- File case, Howell, Apr 27, p 39\*
- Filer & Stowell heavy cross compound Corliss engine, Jan 12, p 1\*
- Finance:  
Banking reform, Mar 30, p 17
- Bankruptcy law, Apr 6, p 9
- Bill to protect currency, Feb 2, p 24
- Bond secured circulation, Apr 20, p 14
- Cheapness of money, Jan 5, p 21b; Feb 9, p 17
- Gold, The movement of, May 4, p 17
- Paper money and gold exports, June 8, p 16
- Volume and velocity of currency circulation, Mar 2, p 21
- Fires:  
Home Life Insurance Company, Jan 19, p 15
- Miller, Sloss & Scott, Apr 6, p 41
- Flag fender, Hart's automatic, June 22, p 53\*
- Flax straw, Cummers' process for retting, Jan 19, p 9
- Flint, C. R., Industrial consolidations, June 1, p 10
- Floor scraper, Osborn metal head, Mar 9, p 52\*
- Floors, brick, Method of laying, Mar 16, p 31
- Fly catchers:  
Bigelow wire, Mar 9, p 47
- Illinois, May 18, p 54\*
- Newton, May 25, p 52\*
- Fly wheels, Rolling mill, May 18, p 4\*
- Food chopper, Enterprise, Mar 23, p 51\*
- Foot scraper, Perfect steel, Jan 26, p 54\*
- Foot warmer, Chicago, Jan 26, p 52\*
- Forbell, B. F., vs. New York City, Mar 2, p 21
- Foundries:  
Cast borings in, Feb 2, p 9
- Electricity in, June 15, p 2
- Foundry for light castings on upper floor, May 25, p 20
- General Electric Company, Apr 6, p 1\*; Apr 27, p 10\*
- Handling materials, May 25, p 9\*
- Heating of, Apr 27, p 10\*
- Foundry crayons, Feb 9, p 50
- Fox Pressed Steel Company and Schoen Pressed Steel Company, Consolidation of, Jan 12, p 31
- Franklin Institute of Philadelphia, Seventy-fifth anniversary, Feb 2, p 25
- Franz Krein Chain Works, Apr 6, p 42
- Freight carrier, Jeffrey traveling, Feb 2, p 12\*
- Freight rates:  
Australia and New Zealand situation, Feb 2, p 51
- Colorado Fuel & Iron Company's suit, Apr 13, p 4
- Lower, for export trade, Jan 19, p 14
- Natural and equitable, Jan 26, p 18
- Opposition to reduction in, Apr 13, p 37
- Pig iron, Feb 9, p 19
- Proposed advances, June 8, p 20; 29, p 22
- Special rates for favored parties, Jan 12, p 16
- Friction clutch, Orton, for small powers, Mar 2, p 5\*
- Fritz, John, Rolling mill fly wheels, May 18, p 4\*
- Fuel, Liquid, Apr 20, p 13
- Furnace arch brick, Vrooman, Feb 9, p 5\*
- Furnace consolidation, Jan 12, p 30; 19, p 20; 26, p 32; Mar 2, p 15; 16, p 7
- Furnaces, Liquid fuel crucible, Apr 13, p 13\*
- Furring, Nailable iron, Mar 23, p 7\*
- G.**
- Galvanizing, Electrolytic, Jan 26, p 17; Feb 2, p 26
- Garbage can, Corrugated, Apr 20, p 56\*
- Garbage pail, Sanitary, Apr 13, p 45\*
- Garrett, William, Observations of an American rolling mill engineer, Mar 30, p 4
- Garvin Machine Company, Preferred stock of, Apr 20, p 28
- Gas engines:  
Blast furnace gas, Use of, June 29, p 6, 19
- Charter, Feb 9, p 4
- Dynamo driving, Jan 26, p 6\*
- From the user's standpoint, Apr 6, p 8
- Lewis, Jan 12, p 5\*
- Nash, Mar 30, p 11\*; Apr 13, p 10\*
- Gas fixture, Miller patent extension, Mar 30, p 47
- Gas fixture consolidation, Apr 6, p 15; May 11, p 11
- Gas holder, Destruction of, New York, Jan 26, p 23
- Gates, J. W., Mar 23, p 15\*
- Gathmann gun, Mar 23, p 22
- Gauges:  
Billing's, Jan 5, p 54\*; 19, p 48\*
- Wire gauge, Stubbs, Jan 19, p 46
- General Electric Company:  
Heating the foundry, Apr 27, p 10\*
- Motors, Feb 16, p 5\*
- New foundry, Apr 6, p 1\*
- Geometric Drill Company, May 25, p 15
- German rolling mill engines, June 8, p 8\*; 15, p 6; 22, p 8\*
- Glass cutter, Accurate, Mar 16, p 46\*
- Glue heater, Improved steam, Apr 20, p 56\*
- Goettsche, Ehler, June 8, p 39\*
- Gold:  
Increase of gold and the advance of prices, May 18, p 20
- Movement of gold, May 4, p 17
- Paper money and gold exports, June 8, p 16
- Production, United States, 1898, Jan 12, p 4; June 22, p 6
- Goodell power hack saw, Mar 2, p 15
- Gorton disk surface grinding machine, Jan 26, p 1\*
- Governor, Dean, June 1, p 4\*
- Graining paper, Mar 2, p 56\*
- Graphite:  
Manufacture of, June 8, p 6
- Production of, May 11, p 18
- Grates:  
Gumphert shaking, Apr 20, p 1\*
- Sennett rocking, Mar 23, p 5\*
- Gray & Dudley Hardware Company's banquet, Jan 12, p 49
- Green, W. A., Mar 23, p 17
- Grille, Ludlow-Saylor wrought iron, Jan 26, p 9\*
- Grinding machines:  
American twist drill, June 1, p 9\*
- Combined with lathe, Mar 16, p 1\*
- Gorton disk surface, Jan 26, p 1\*
- Niagara emery grinder, Feb 2, p 60\*
- Safety Emery Wheel Company, Mar 30, p 3\*
- Tanite emery, Apr 6, p 13\*
- Yankee twist drill, Mar 2, p 16\*
- Grindstone hanger, Giant, Mar 9, p 50\*
- Growing demand for goods, May 18, p 19
- Grubbing machine, Steel Giant, Mar 23, p 52\*
- Gruson Iron Works, May 11, p 15
- Gumphert shaking grate, Apr 20, p 1\*
- Guns:  
British naval, Jan 26, p 8
- Gathmann, Mar 23, p 22
- High explosives in, Feb 23, p 8
- H.**
- Hack saw, Universal power, May 4, p 6\*

- Hackett Hardware Company, C. W., Mar 30, p 41
- Hallidie Wire Rope, Tramway & Cable Company, Apr 27, p 18
- Halstead, Consul, Bolts and nuts in England, Jan 19, p 3
- Halter chains, Oneida, June 1, p 44\*
- Hammer, Little Giant pneumatic, May 18, p 17
- Hammocks:
- Hanging correctly, May 4, p 49\*
  - Lloyd wire, Apr 13, p 44
  - Palmer's royal social, Jan 12, p 53
  - Utopia, Feb 2, p 60\*; Mar 9, p 51\*
- Handle polishing machine, Defiance, June 29, p 11\*
- Hansel, Charles, Business cards, Jan 26, p 8
- Hardening apparatus, Spousel, June 8, p 12\*
- Hardware antiquities, May 4, p 46
- Hardware Association of the City of New York, May 11, p 39
- Hardware expansion, June 22, p 47
- Hardware merchants:
- Jobber's place in distribution of hardware, Mar 9, p 43
  - Joint shipments for retailers, Apr 27, p 38
  - Last century methods, June 8, p 44
  - Revival of "Good faith," May 11, p 40
  - Policy with reference to catalogue houses, Jan 19, p 42
  - (See also Advertising; Business methods; Salesmen.)
- Hardware premiums, Apr 13, p 37
- Hardware trade:
- Avenues of trade, Mar 2, p 48
  - California matters, Feb 23, p 43
  - Carpenters and builders, Trade with, May 11, p 42
  - Combinations, Effect of, Mar 2, p 42
  - Discussion in Missouri, Apr 20, p 44
  - Forty years in the trade, Feb 9, p 44
  - Germany, American trade, Mar 30, p 40
  - Local competition, Feb 16, p 42
  - Opportunity for American hardware in foreign markets, Jan 12, p 43
  - Relations between jobbers and retailers, Feb 2, p 54; Mar 30, p 40
  - Spalding policy, Jan 5, p 43; 12, p 38; 19, p 38; Feb 2, p 50; Mar 30, p 40; Apr 27, p 40; May 4, p 44; 11, p 40; 18, p 51; June 1, p 40; 15, p 39; 29, p 45
  - United States, June 8, p 42
  - Upbuilding of retail trade, Feb 16, p 54
  - Western situation, Apr 27, p 40
  - (See also Export trade.)
- Harrington folding cutter rack, May 4, p 7\*
- Hartford water motor pump, Feb 23, p 13\*
- Havana's new hardware store, Feb 9, p 49
- Hawaiian Islands:
- Hardwareman in, Feb 23, p 40
  - Hardware house, June 22, p 36
  - Tariff, May 4, p 12
- Hawley, M. C., Death of, Jan 19, p 36\*
- Hay-Budden Mfg. Company, Jan 12, p 47
- Hay, W. H., Forty years in the hardware business, Feb 9, p 44
- Hay knife, Iwan sickle edge, Jan 26, p 53\*
- Hay tools, Janesville, Feb 23, p 47
- Haydenville Mfg. Company, Apr 6, p 43
- Heating foundry of General Electric Company, Apr 27, p 10\*
- Heavy Hardware Jobbers' National Union, Apr 13, p 37
- Helgesen, H. T., Modern concentration of business and its logical consequences, Feb 23, p 38
- Henderson steam heated tumbling barrel, Jan 5, p 16\*
- Hendryx, A. B. & Co., Feb 2, p 49
- Henning, G. C., Investigations of boiler explosions, May 11, p 14
- Hessel, John, How to compete with the department store, Feb 9, p 46
- Hewitt, A. S., Prophecies of, Jan 19, p 8
- Heyl & Patterson casting machine, May 18, p 1\*
- Hibbard, Spencer, Bartlett & Co., Jan 26, p 48
- Hirst, William, The design of roughing rolls, Mar 16, p 2\*
- Hoadley-Knight auto-trucks, May 4, p 1\*
- Hobson, Thomas, The Philadelphia Iron market in 1898, Jan 5, p 21
- Hoisting engines:
- Carlin four-spool, Mar 16, p 13\*
  - Hunt electric, Mar 9, p 7\*
- Hoists:
- Coal hoist, Jan 5, p 12\*
  - Compressed air, June 1, p 5\*
- Home Life Insurance Company's Building, Damage by fire, Jan 19, p 15
- Honecker, C. A., Mar 23, p 18\*
- Hoop iron and cotton tie consolidation, Mar 30, p 31; Apr 13, p 30; 20, p 28; 27, p 32
- Hoops:
- Herrick's wire, June 1, p 44\*
  - Oatman's Handy, Mar 23, p 52\*
- Horseshoe trade, Jan 19, p 39
- Hungerford Brass & Copper Company, Apr 6, p 42
- Hunt, A. E., Death, May 4, p 18\*
- Hunt electric hoisting engines, Mar 9, p 7\*
- Husking pins, Tyler's corrugated steel, Apr 6, p 49\*
- Hutchison, Richard:
- Sectional vertical tube boiler, Jan 19, p 4\*
  - Steam and oil separator, Feb 16, p 8\*
- Hyatt roller bearing, Feb 23, p 12\*
- I.**
- Ice cream freezer, Easy, Feb 16, p 58\*
- Ice jams in Niagara gorge, Feb 9, p 4
- Ice pick, White Mountain, Mar 23, p 50\*
- Ice scales, Invincible, Jan 19, p 48\*
- Illinois, Arbitration in, May 4, p 17
- Illinois Retail Hardware Association, June 29, p 40
- Illinois Steel Company, Jan 5, p 7, 19; Feb 9, p 5; Mar 9, p 5
- Slabbing mill, June 29, p 1\*
- Illuminating device, Marine, May 25, p 18
- Imitations, Protection against, Feb 2, p 12
- Import trade, Great Britain, Excess of, Feb 23, p 6
- India, American manufacturer's impressions, June 1, p 37
- Indiana anti-trust decision, June 15, p 5; 22, p 15
- Indicator, Woodman & Hudson speed, Jan 12, p 13\*
- Industrial and material progress, May 18, p 19; Apr 6, p 16
- Industrial conciliation in England, Mar 23, p 3
- Industrial consolidations, Mar 23, p 12; June 1, p 10; 22, p 15; 29, p 34
- Industrial organizations, Strength of, May 4, p 16
- Industrial stock speculation, Jan 26, p 19; April 13, p 15; June 8, p 15, 30
- Industry, American development, Mar 30, p 6
- Ink well, Hayne suspended, May 4, p 52\*
- International Car Wheel Company, June 15, p 34
- International Steam Pump Company, Mar 16, p 29
- Interstate Commerce Commission, Jan 12, p 17; 19, p 6
- Iowa Retail Hardware Dealers' Association, Jan 26, p 45; Feb 16, p 44
- Ireland, C. H., Address of, June 22, p 42
- Iron:
- Determination of carbon without combustion apparatus, May 11, p 30
  - Malleable cast iron, Feb. 16, p 2; 23, p 4; Mar 9, p 16; 23, p 14; 30, p 18
  - Manganese in the acid open hearth process, Mar 30, p 13
  - Manufacture of bar iron, Improvements, May 25, p 14
- Iron (Continued):
- Standardized iron samples, May 25, p 19
  - Use, design and manufacture of iron in ornament, Apr 27, p 3\*
  - (See also Pig iron.)
  - Iron Age*, The, advertising prize competition, June 29, p 43
  - Iron and steel, Best books on, June 15, p 9; 22, p 29; 29, p 15
  - Iron and steel consolidation, Mar 9, p 15; 16, p 18; Apr 6, p 18; 13, p 30; 20, p 28; 27, p 18; May 4, p 31; June 1, p 16; 15, p 13, 17
  - Iron and steel industries, American management, labor and resources, May 4, p 4
  - Iron and steel works, New scale, June 15, p 19
  - Iron ore property, Growing interest in, Mar 30, p 18
  - Iron production:
    - Argentine Republic, Mar 23, p 7
    - Basis of iron industry, Jan 12, p 6
    - Charcoal iron in Ontario, June 29, p 18
    - Decade of progress in reducing costs, Mar 2, p 6
    - English finished iron industry, Apr 27, p 33
    - Lake districts, Jan 5, p 17, 21b; 12, p 7; 19, p 10; Feb 2, p 16; 9, p 2; Mar 9, p 6; 30, p 9; Apr 6, p 4; 13, p 32; 20, p 30; 27, p 18; May 18, p 11; 25, p 26, 39; June 8, p 13; 15, p 12; 22, p 13; 29, p 11
    - Malleable iron, Development in U. S., Feb 9, p 14
    - Prophecies of A. S. Hewitt, Jan 19, p 8
    - Russian industry, June 29, p 20
    - Swank's 1898 figures, May 25, p 28
    - (See also Pig iron production.)  - Iron studding and furring, Nailable, Mar 23, p 7\*
  - Iron trade:
    - Brazil, American trade with, Feb 16, p 9
    - Capitalizing our supremacy, Feb 16, p 16
    - Chicago, 1898, Jan 5, p 8; Feb 2, p 15
    - Condition of, Mar 16, p 19
    - English, 1898, Jan 26, p 14; Feb 16, p 6, 11
    - Farm implement contracts, June 8, p 17
    - Freight rates advance, June 8, p 20
    - Philadelphia, in 1898, Jan 5, p 21d
    - Prices and profits, Mar 16, p 17
    - Reduction of expenses by consolidation, May 25, p 27
    - Review of Jan.-June, 1899, June 29, p 19
    - Scrap iron trust, Feb 23, p 16
    - Shipping in the Great Lakes and the iron trade, May 4, p 8
    - Transfer of capital, Jan 26, p 20
    - Views of Pres. Buffington, June 15, p 20
    - Western bar iron, June 1, p 16
    - (See also Export trade.)
- J.**
- Jacks:
- Covert steel carriage, Feb 2, p 59\*
  - Samson malleable iron, Feb 2, p 62\*
- Janney, Semple, Hill & Co., Apr 13, p 42\*
- Japan:
- As it appeared to an American manufacturer, Jan 19, p 37
  - World's fair, 1902, Apr 6, p 31
- Jeans, J. S., World's consumption of pig iron in the steel industry, June 1, p 14
- Jeffrey traveling freight carrier, Feb 2, p 12\*
- Jobbers (See Hardware merchants; Salesmen.)
- John Hancock: His book, June 8, p 44
- Johnston, E. E., Pig iron analysis, May 18, p 8
- Joint shipments for retailers, Apr 27, p 38
- Jones & Laughlins, Limited, May 25, p 7
- Journal bearings, Spiral, Mar 9, p 4\*
- K.**
- Kansas Retail Hardware Dealers' Association, Mar 2, p 43

- Keefe, J. S., Mar 23, p 20\*
- Keegan charges against the Navy Ordnance Bureau, Feb 9, p 6; 23, p 14
- Keep, W. J., Handling materials in a foundry, May 25, p 9\*
- Kelley, J. C., The use of gas engines for dynamo driving, Jan 26, p 6
- Kelly Axe Company, June 1, p 41
- Kennedy furnace filling apparatus, June 29, p 9\*
- Kerosene engines, Mietz & Weiss, Mar 2, p 1\*
- Kettle, Security, Feb 9, p 50\*
- Key duplicating machine, Apr 20, p 2\*
- Key remover, Noonan's crank, Feb 9, p 51\*
- Key seater, Davis, May 25, p 8\*
- Kiesselbach, C., German rolling mill engines, June 8, p 8\*; 15, p 6; 22, p 8\*
- Kirchhoff, C., A decade of progress in reducing costs, Mar 2, p 6
- Knight of the grip, Jan 12, p 44; 19, p 40; Feb 2, p 53; 16, p 57; Mar 9, p 41; 23, p 45; Apr 13, p 38; 27, p 37; May 18, p 50
- Knives:
- Billings' sportsman's, Feb 16, p 59\*
- Dexter, Jan 5, p 49
- Goodell table, Apr 27, p 42\*
- Iwan hay knife, Jan 26, p 53\*
- Mammoth carving set, June 29, p 50\*
- Victor folding guard, June 22, p 53\*
- Kraut cutter, Disston adjustable, Mar 30, p 47
- Krueger, W. J., June 8, p 39\*
- Kupferle, J. C., Apr 13, p 42
- L.**
- Labor:
- Arbitration in Illinois, Jan 12, p 18; May 4, p 17
- Development of industry in America, Mar 30, p 6
- Eight-hour bill in Congress, Feb 9, p 6; 23, p 13
- Industrial conciliation in England, Mar 23, p 3
- Working overtime, Jan 19, p 16; Feb 2, p 25
- (See also Wages.)
- Lackawanna Iron & Steel Company, Mar 9, p 18; Apr 13, p 3
- Ladders:
- Lane store, Mar 16, p 49\*
- McCabe shelf and ceiling, June 29, p 50\*
- Magie trolley, May 25, p 54\*
- Rolling step ladder, Mar 23, p 49
- Ladner, C. F., Address of, Feb 16, p 36
- Lake iron ore, (See Iron production.)
- Lambert, John, Mar 23, p 15\*
- Lamp, Invincible vapor, Mar 23, p 50\*; May 4, p 49
- (See also Bicycle lamps.)
- Lane, J. G., June 8, p 41\*
- Lane & Bodley Bennett-Corliss air compressor, Jan 19, p 10\*
- Lathes:
- Baird engine lathe, June 1, p 12\*
- Blaisdell standard, Feb 16, p 1\*
- Chaplin automatic handle, Feb 2, p 9\*
- Combined with grinding machine, Mar 16, p 1\*
- Defiance spoke and handle, May 18, p 7\*
- Notes on, Jan 26, p 10
- Tanite polishing, Apr 6, p 13\*
- Lawn mower sharpener, Maynard, June 8, p 50\*
- Lawn mowers:
- Coldwell's self-adjusting, Apr 20, p 54\*
- K. R. B., May 11, p 48\*
- Lawn sprinklers:
- Adjustable, Feb 2, p 59\*
- Pullman, May 25, p 51\*
- Lead smelters and refiners consolidate, Mar 9, p 32
- Lead smelting, Cost of, Mar 2, p 12
- Lemon squeezers:
- Belmonico, Apr 13, p 46\*
- Leader, Feb 16, p 59\*
- X-Ray, May 11, p 45\*
- Leonard catalogue cabinet, Mar 30, p 43\*
- Lewis gas engine, Jan 12, p 5\*
- Lift, Burr steel safety, Feb 2, p 60\*
- Lighting factories by calcium carbide and acetylene, Feb 23, p 3
- Limestone consumed in making pig iron, June 1, p 5
- Liquid fuel, Apr 20, p 13
- Local hardware associations, Formation of, May 18, p 46
- Lock, Warner steel rim, Apr 20, p 55\*
- Locking pivot, B. T. C., Mar 23, p 49\*
- Locomotives:
- Allen valve, May 25, p 4\*
- British export, 1898, Feb 16, p 6
- Cast steel frames, Jan 12, p 12
- Japan, Jan 12, p 18
- Link in early history, June 1, p 28c
- Londonderry Iron Company, Limited, Mar 2, p 13
- Lott, E. C., Mar 23, p 19\*
- Lowe smoke preventer, Jan 12, p 8\*
- Loyhed, E. H., Combinations and trusts, June 29, p 47
- Lucas & Gliem:
- Automatic saw sharpening machine, June 19, p 13\*
- Bar cold saw cutting off machine, Jan 19, p 13\*
- Ludlow-Saylor wrought iron grille, Jan 26, p 9\*
- Lukens Iron & Steel Company, Feb 9, p 2
- Lunch box, Folding, June 22, p 53\*
- Lynn water tube boiler, May 18, p 11\*
- M.**
- McCormick Harvesting Machine Company, Mar 9, p 12
- Machine frames, Boring, milling and tapping, by use of templates, New methods, Jan 26, p 3\*
- Machine shop at New York Navy Yard, May 25, p 31
- Machine tools:
- American, Protection against imitations, Feb 2, p 12
- English and American, Jan 26, p 10; Mar 9, p 4
- Paris Exposition, June 1, p 6
- Machinery trade:
- Builders crowded with work, June 22, p 17
- Cincinnati, Feb 2, p 26
- Italy, 1897, Feb 2, p 18
- Worcester industry, Mar 9, p 2
- Machines in mining coal, June 29, p 17
- McLoughlin, Dennis, June 8, p 39\*
- McWilliams, J. W., Death of, Mar 9, p 40
- Magnates of the wire industry, Mar 23, p 15\*
- Magnetic ore deposits, Use of magnetic instruments for discovering, Apr 13, p 6\*
- Maher, W. H., A merchant of the last century, June 8, p 44
- Malleable cast iron, Feb 16, p 2; 28, p 4; Mar 9, p 16; 23, p 14; 30, p 18
- Malleable castings, Coke and charcoal iron for, Mar 30, p 30; Apr 6, p 5
- Malleable iron industry, Its development in the United States, Feb 9, p 14
- Mallory-Wheeler Co., Jan 26, p 50
- Manchester Ship Canal, Feb 2, p 10
- Mandelbaum, J. J., Addresses of, June 22, p 41, 44
- Manganese in the acid open hearth process, Mar 30, p 13
- Manistee air pump, Apr 27, p 1\*
- Mannesmann Tube Company's projectile contract, Mar 30, p 10
- Manufacturers, Frontier limitations of, Feb 23, p 18
- Manufacturers' Association of New York, Apr 20, p 37
- Manufacturers in Argentine Republic, Mar 23, p 7
- Manville Covering Company, Apr 27, p 9
- Marchal, M. J., Influence of arsenic on the mechanical properties of steel, Apr 13, p 5
- Marconi wireless telegraphy, Apr 13, p 3; 20, p 9\*, 16
- Marine engineering on the Great Lakes, Jan 12, p 4
- Marine illuminating device, May 25, p 18
- Maritschek, Emil, Protection against imitations, Feb 2, p 12
- Marking of oil cloths, Mar 30, p 40
- Matthal, W. H., Our export trade, June 22, p 46
- Matthewman, F. A., Manganese in the acid open hearth process, Mar 30, p 13
- Mattox, A. H., Progress at the Paris Exposition, Mar 9, p 2
- Mattox, W. S.:
- Ocean shipping and the export trade, Jan 12, p 3
- English iron trade in 1898, Jan 26, p 14; Feb 16, p 11
- Manchester Ship Canal, Feb 2, p 10
- Mayer dynamos and motors, Apr 20, p 13\*
- Meat juice extractor, Brighton, Feb 2, p 59\*
- Melting furnace, Grant portable, Jan 5, p 51; 12, p 54
- Merrell Mfg. Company, May 4, p 11\*
- Metric system of weights and measures, Feb 2, p 24
- Metropolitan Street Railway Company, New York, Compressed air, May 4, p 1\*; June 8, p 1\*
- Mexico, Trade conditions in, Feb 23, p 10
- Michigan's anti-trust law, June 22, p 4
- Michigan Stove Company, Handling materials in a foundry, May 25, p 9\*
- Mietz & Weiss kerosene engine, Mar 2, p 1\*
- Milk cans, Sturges, Feb 23, p 47
- Milk pail, Anti-dirt, Apr 6, p 45\*
- Miller, Sloss & Scott's fire, Apr 6, p 41
- Milling tool, Adjustable hollow, May 25, p 15\*
- Milwaukee Hay Tool Company, Mar 9, p 47
- Mineral resources of Porto Rico, Mar 16, p 9
- Mineralogy and mining, Proposed department of, Jan 19, p 8
- Miners' Copper Company, Feb 2, p 39
- Mining concession in China, Anglo-American, Feb 16, p 6
- Mining law, New British Columbia, Feb 2, p 13
- Minneapolis Retail Hardware Association, Feb 16, p 43
- Minnesota Retail Hardware Association, Jan 5, p 40; 19, p 41; Feb 2, p 49; 16, p 36; 23, p 41; Mar 30, p 39
- Minnesota Retail Hardware Dealers' Mutual Insurance Association, June 8, p 37
- Missouri Retail Hardware Dealers' Association, Feb 23, p 43; Mar 23, p 44; 30, p 39; Apr 6, p 39
- Missouri Retail Hardware and Stove Dealers' Association, Apr 20, p 42
- Miter box and saw guide, June 8, p 50\*
- Modern concentration of business and its logical consequences, Feb 23, p 38
- Molders' wages advanced, Mar 23, p 4
- Molders' wax tapers, Jan 12, p 33
- Molding machines:
- Adaptability to the stove trade, June 1, p 20
- Farquhar pulley, Mar 9, p 11\*
- Pridmore for molding steam pumps, Mar 23, p 1\*
- Money (See Finance.)
- Monitor, The old style of, May 18, p 22, Sup\*
- Monongahela Consolidated Coal & Coke Company, June 29, p 5
- Moore, V. A., The manufacturers' representative, June 22, p 49
- Morrill saw sets, Mar 23, p 47
- Morse, S. A., Portrait of, Jan 5, p 20\*
- Motor vehicles:
- Fisher truck, Jan 26, p 9
- New England Electric Vehicle & Transportation Company, Mar 30, p 2
- Possibilities of, Jan 26, p 9
- Progress of industry, June 8, p 17
- Victor automobiles, Mar 23, p 49\*
- Motors (See Electric motors.)
- Mott, A. C., Molding machines, June 1, p 20

Mouse circus, Lindemann, Mar 2, p 54\*  
Muffle and crucible furnace, Combination, Feb 9, p 51\*  
Murlock, R. C., The Wisconsin Retail Hardware Association, Feb 9, p 42  
Mutual fire insurance and hardware organizations in the Northwest, Mar 23, p 46  
Myers' bulldozer power pump, Jan 19, p 2\*

## N.

Nail clipper, Gem, Apr 20, p 55\*  
Nail pullers:  
Millers Falls, Feb 23, p 49\*  
Star, May 11, p 48\*  
Trojan one-hand, Mar 30, p 50\*  
Nail trade in 1898, Jan 5, p 41  
Nailable iron, studding and furring, Mar 23, p 7\*  
Nails, Revised price-lists, Jan 19, p 34  
Nash gas engines, Mar 30, p 11\*; Apr 13, p 10\*  
National Association of Manufacturers, Jan 26, p 21; Feb 2, p 21  
National Bankruptcy Convention, June 8, p 5  
National Enameling & Stamping Company, Feb 2, p 49  
National Founders' Association, Feb 2, p 5; Mar 16, p 8; Apr 6, p 31  
National Tube Company, June 1, p 18; June 15, p 1  
National Wire Company, Apr 6, p 15  
National skeleton drill chuck, Feb 2, p 14\*  
National Steel Company, Feb 9, p 21; 16, p 18; Mar 2, p 19; 30, p 31; Apr 6, p 20; 27, p 22  
Natural gas:  
Chicago, June 29, p 3  
Indiana, Feb 16, p 10  
Navy, U. S.:  
Appropriation bill, Feb 23, p 19; Mar 2, p 19; 34; 9, p 34; 16, p 13  
Bids for tools, Apr 27, p 14  
Keegan charges against the navy ordnance bureau, Feb 9, p 6; 23, p 14  
Mannesmann projectile contract, Mar 30, p 10  
Specifications for shrapnel and fuse, Jan 19, p 20  
Navy yard, Brooklyn:  
Improvements, June 1, p 28a  
Machine shop, May 25, p 30  
Power plant, June 22, p 7  
Nernst electric light, Mar 9, p 18  
New Doty combined pump and shear, Feb 16, p 11\*  
New England Hardware Dealers' Association, Feb 2, p 48; 16, p 34; Mar 2, p 42; 16, p 42; Apr 6, p 39; 20, p 50; May 18, p 46; June 22, p 36  
New England Iron and Hardware Association, Mar 2, p 43; 16, p 43; 23, p 42; Apr 20, p 40; June 1, p 38  
New York Clearing House and out of town checks, Apr 13, p 17; 27, p 19; June 15, p 38  
New York Hardware Club, Jan 19, p 43; Mar 23, p 44; 30, p 39  
New York State Association of Hardware Jobbers, May 25, p 45  
New York Steel & Wire Company, New plant, June 8, p 19  
New Zealand freight rates, Feb 2, p 51  
Niagara Falls Power Company, New carbide plant, Apr 27, p 9  
Niagara gorge, Ice jams in, Feb 9, p 4  
Niagara Machine & Tool Works:  
Double seaming and wiring machine, Feb 2, p 14\*  
Power punch, Mar 16, p 15\*  
Niagara whirlpool power, Jan 26, p 9  
Nicaragua Canal, Cost of, June 8, p 18  
Nickel, chromium and silicon steels, Feb 2, p 6; 9, p 10  
Nickel steel armor patents, Feb 9, p 8  
Niles-Bement-Pond Company, June 15, p 34  
Nipple grip, Neverslip, Jan 26, p 51\*  
Non-union men, Rights of, in Illinois, Jan 12, p 18  
Nordenstrom, G., The use of magnetic instruments for discovering magnetic ore deposits, Apr 13, p 6\*

Norman, P. L., Local competition, Feb 16, p 42  
North Dakota Retail Hardware Association, Jan 26, p 46; Feb 2, p 48; 23, p 35  
Northwestern Retail Hardware Association and Spalding's policy, May 18, p 51; June 1, p 40; 15, p 39; 29, p 45  
Nut crack, pick, holder and tray, June 1, p 45\*  
Nuts and bolts in England, Jan 19, p 3

## O.

## Obituaries:

Adair, J. A., May 4, p 18; Ayer, H. C., Jan 19, p 17  
Bartlett, D. L., May 18, p 23; Baslington, G. O., Mar 9, p 16; Bauer, C. A., June 29, p 21; Bennett, W. H., Jan 26, p 20; Bent, S. S., Jan 5, p 20; Biggers, S. L., May 11, p 22; Blair, William, May 18, p 49; Bolinckx, Henry, Mar 30, p 19; Bowles, P. P., Mar 23, p 25; Boynton, G. C., June 22, p 33; Bradley, David, Mar 2, p 22; Britton, J. B., Feb 2, p 26; Brown, Felix, Apr 13, p 18; Bullock, M. C., Jan 19, p 17  
Cadwallader, C. W., Jan 19, p 18; Capp, Jacob, Jan 19, p 18; Card, S. W., Feb 16, p 17; Carpenter, E. S., Mar 2, p 22; Carpenter, W. H., May 18, p 23; Carter, Frank, Mar 30, p 18; Chadwick, H. S., Mar 9, p 17; Chaffee, E. W., June 22, p 33; Chalfant, J. W., Jan 5, p 21; Chapman, H. W., Feb 2, p 26; Clare, J. D., Jan 5, p 20; Clark, C. E., Mar 23, p 25; Cochran, P. G., June 8, p 19; Colburn, W. C., Mar 23, p 25; 30, p 18; Cole, B. J., Jan 26, p 20; Coleman, Bannen, Jan 5, p 20; Cone, E. G., Jan 5, p 20; Conger, A. L., Mar 2, p 22; Cook, Frederick, Mar 9, p 16; Coombe, Thomas, Jan 12, p 14; Crawford, J. P., May 18, p 23; June 1, p 17; Curll, D. B., Mar 2, p 22  
Daly, Charles, Jan 19, p 36; Daniels, H. A., June 29, p 21; Dashiell, R. B., Mar 16, p 19; Davitt, H. F., May 11, p 22; Denniston, James, Jan 19, p 17; Dickey, W. C., Apr 27, p 19  
Eastword, Benjamin, May 4, p 18; Eberly, Isaac, Feb 16, p 17; Egan, J. H., Jan 5, p 20; Emerick, J. A., Mar 2, p 21; Eyre, H. C., Mar 16, p 19  
Faux, William, Mar 9, p 17  
Gardner, N. G., Feb 2, p 26; Geist, F. L., Feb 23, p 18; Gray, Joshua, June 29, p 21; Greene, Gen. G. S., Feb 2, p 26; Grubb, E. B., Jan 19, p 18  
Hagar, G. I., Mar 16, p 19; Harrington, E. L., Mar 23, p 25; Harris, D. W., Jan 26, p 20; Harrison, J. L., Mar 5, p 20; Harwood, N. A., June 29, p 21; Haskell, L. F., Feb 23, p 18; Hawley, M. C., Jan 19, p 36; Haws, A. J., Mar 16, p 19; Hayden, E. S., Feb 23, p 18; Head, Jeremiah, Mar 30, p 19; Hill, C. L., May 25, p 27; Hobart, Thomas, Mar 9, p 16; Hodgman, G. P., Jan 5, p 20; Hodson, J. L., Apr 20, p 16; Hogue, P. P., Mar 30, p 19; Howe, W. R., June 22, p 33; Hoyt, H. L., June 15, p 20; Hunt, A. E., May 4, p 18  
Isbester, C. B., Feb 23, p 18  
Jackson, J. H., Mar 30, p 18; Jackson, Matthew, Jan 19, p 18; James, Reese, Apr 20, p 15; Jenkins, D. S., Mar 2, p 22; Johnson, I. G., June 8, p 18; Johnson, S. C., Jan 12, p 14; Johnson, W. G., Mar 9, p 16  
Kaesberg, Adolph, May 4, p 18; Kauffman, A. J., June 1, p 17; Keith, I. N., Apr 27, p 19; Kelley, D. T., May 11, p 22; Kelley, Fred., Jan 5, p 20; Kimball, Hiram, Mar 16, p 19; Kline, J. F., Feb 23, p 18; Knight, E. H., May 11, p 22; Kreusl, John, Mar 2, p 22

## Obituaries (Continued):

Lampton, W. H., Jan 26, p 20; Lane, J. G., June 8, p 41; Lees, James, Feb 2, p 26; Lissberger, Lazarus, Jan 26, p 20; Lowe, James, Apr 20, p 15; Lyon, J. S., Jan 19, p 18; Lyon, S. S., Jan 19, p 17  
Macbeth, John, Feb. 23, p 18; McClure, Joseph, Apr 20, p 15; McHenry, A. R., Jr., Mar 2, p 22; McMillan, Joseph, Feb 2, p 26; McWilliams, J. W., Mar 9, p 40; Marshall, H. G., Mar 9, p 17; Marvin, Gen. S. E., Jan 26, p 20; Mason, J. P., Mar 9, p 16; Mason, T. F., June 8, p 18; Maugher, J. N., Jan 5, p 20; Merrill, J. B., Jan 5, p 21; Middleton, W. B., Mar 16, p 19; Miller, Lewis, Mar 2, p 21; Mitchell, C. M., Mar 16, p 19; Montgomery, Samuel, June 15, p 20; Moore, J. H., May 25, p 27; Morgan, F. H., June 29, p 21; Morse, S. A., Jan 5, p 20; Mueller, Louis, Jan 26, p 21  
Neal, William, Feb 16, p 17; Newcombe, G. L., Mar 2, p 22; Newell, J. S., May 25, p 27; Nye, A. T., Jan 19, p 18  
Parke, S. R., Jan 19, p 17; Parsons, C. W., Jan 5, p 20; Peacock, George, Apr 13, p 18; Penn, George, Jan 26, p 20; Perry, E. Y., May 25, p 27; Pltkin, L. M., May 4, p 18; Platt, W. H., Jan 19, p 18  
Reed, J. H., Mar 16, p 19; Rice, J. V., Jan 19, p 18; Richards, R. F., Mar 9, p 16; Roe, C. S., Apr 27, p 19  
Secretan, M., Mar 16, p 15; Semple, James, May 25, p 27; Smack, Robert, Jan 5, p 20; Smith, W. A., Mar 30, p 18; Smyser, H. E., Mar 16, p 19; Southard, W. D., May 18, p 23; Spang, Jacob, Apr 27, p 19; Sterick, George, May 11, p 22; Sterling, A. P., Feb 23, p 18; Stetler, Abner, Jan 19, p 17; Stone, H. D., Apr 27, p 19; Strang, S. B., May 25, p 27  
Taber, E. S., Mar 16, p 19; 23, p 25; Thomson, Frank, June 8, p 18; Tilghman, R. A., Mar 30, p 18; Tougas, L. T., Jan 12, p 14  
Ulery, S. W., June 22, p 33  
Van Bergen, J. B., May 4, p 18  
Warrington, E. R., Apr 13, p 18; Wells, F. C., Mar 16, p 19; Wells, Moses, Jan 5, p 21; White, W. C., Jan 26, p 21; Winne, F. N., June 8, p 18; Wood, Thomas, May 4, p 18; Wood, W. D., Jan 12, p 14; Woods, E. P., Jan 19, p 17; Woods, James, Apr 20, p 16; Woodruff, W. W., Jan 5, p 21; Wren, J. Y., June 29, p 21  
O'Brien, J. E., Address of, Feb 23, p 41  
Ohio Hardware Association, Feb 2, p 48; Mar 2, p 44; 23, p 44  
Oil cloths, Yard marking of, Mar 30, p 40  
Oil cup, Egan automatic, Mar 30, p 5\*  
Oil heater, Miller, June 22, p 54\*  
Oil injector, Urquhart, Apr 13, p 11\*  
Oil stone, Turkish emery, Mar 23, p 50\*  
Oiler, Combination safety, Mar 23, p 50\*  
Old Meadow Rolling Mill Company, Feb 23, p 20  
Oliver Iron & Steel Company, Jan 26, p 13\*  
Oliver Iron Mining Company, Apr 27, p 18  
Oliver wood trimmers, June 29, p 13\*  
O'Neill, Captain, High explosives in guns and shells, Feb 23, p 8  
Orton friction clutch for small powers, Mar 2, p 5\*  
Owen, O., Mar 23, p 21  
**P.**  
Pacific Coast news, Jan 26, p 13; Feb 9, p 19; Mar 2, p 14; 16, p 12; 30, p 14; Apr 13, p 33; May 11, p 10; June 1, p 31; 22, p 14  
Pacific Retail Hardware Association, Feb 2, p 49; 9, p 48; Apr 6, p 40  
Padlocks:  
Chapman cast and wrought iron, Jan 26, p 50

## Paddocks (Continued):

Imperial, Mar 2, p 54\*  
 Mallory-Wheeler, Jan 26, p 50  
 Nickeled, Mar 9, p 48\*  
 Palmer, I. E., Middletown, Conn., Jan 19, p 42  
 Panama Canal commission, June 15, p 1  
 Paper money and gold exports, June 8, p 16  
 Paris Exhibition, 1900:  
 Appropriation, Feb 16, p 1  
 Civil engineering and transportation, June 22, p 17  
 Plan of, Feb 23, p 15, Sup.  
 Progress at, Mar 9, p 2; May 18, p 37  
 Park Steel Company, Mar 16, p 10  
 Parlin, W. D., Address of, Apr 20, p 50  
 Patent laws of U. S. extended, Apr 20, p 28  
 Patent property, Conditional nature of, Apr 13, p 13  
 Patents, Nickel steel armor, Feb 9, p 8  
 Pennsylvania anti-trust legislation, June 29, p 10  
 Pennsylvania Steel Company, Mar 16, p 34  
 Peoria Steel & Iron Works, Jan 26, p 9  
 Personal in business, Passing of the, June 1, p 39  
 Peters, Samuel, Manufacture of bar iron, May 25, p 14  
 Petroleum engine, Capitaine, Mar 9, p 8\*  
 Philadelphia Exposition of 1899, Jan 12, p 11; May 4, p 11  
 Philadelphia Foundrymen's Association, Jan 12, p 6; Feb 9, p 14; Mar 9, p 3; Apr 13, p 8; June 15, p 4  
 Philadelphia Hardware Merchants' and Manufacturers' Association, Banquet to W. W. Supplee, Jan 26, p 38  
 Philadelphia ring oiling bearings, Feb 9, p 3\*  
 Pig forceps, Reimers' superior, Jan 26, p 50  
 Pig iron:  
 Analysis of, by E. E. Johnston, May 18, p 8; June 8, p 18  
 Charcoal pig iron versus coke iron, Feb 16, p 16  
 Deceptive fracture of, May 25, p 21  
 Freight rates on, Feb 9, p 19  
 Illinois Steel Company, Jan 5, p 7  
 Increase in, Jan 12, p 22; Mar 30, p 33; May 11, p 19; June 15, p 21  
 Minnesota bonus for, Feb 2, p 11; 9, p 7  
 Recovery in, Apr 13, p 19  
 Statistics, 1897-99, Feb 2, p 40; May 25, p 23  
 Pipe:  
 Flanges and their bolts, May 18, p 15\*  
 Lap welded for South America, June 15, p 1\*  
 Wrought iron, Defects in threads on, Mar 9, p 13  
 Pipe consolidation, Feb 9, p 22; Mar 30, p 31; Apr 13, p 8; May 4, p 13  
 Pipe threading and cutting machine, Merrell, May 4, p 11\*  
 Pipe wrenches, Vulcan chain, Apr 13, p 12\*  
 Pittsburgh as a manufacturing center, May 18, p 24  
 Pittsburgh Foundrymen's Association, Apr 27, p 33  
 Pittsburgh Horseshoe Company, Jan 12, p 46  
 Pittsburgh Reduction Company, Jan 19, p 30  
 Pittsburgh Steel Foundry Company, Apr 6, p 7  
 Planing machines, Notes on, Jan 26, p 10  
 Plumbers' supply combination, Jan 12, p 5; Feb 2, p 8; 16, p 18; Apr 27, p 12; May 18, p 3; June 22, p 13

Plunger direct acting hydraulic elevator, Jan 19, p 7\*  
 Pneumatic Crane Company, June 1, p 5\*  
 Pneumatic tools, Jan 12, p 2  
 Poland, J. W., Address of, Apr 20, p 44\*  
 Polishing heads, Feb 2, p 61\*  
 Porto Rico:  
 Mineral resources, Mar 16, p 9  
 Tariff, Jan 26, p 16; May 4, p 12  
 Posts, Kolomo steel, Apr 6, p 49\*  
 Potato and apple cutter, Rollman, Apr 27, p 45\*  
 Potato fork, Dig-Ezy, June 15, p 47\*  
 Power, Economy in small, Apr 6, p 8  
 Pratt & Whitney Company:  
 Officers, Mar 30, p 15  
 Positive driving drill chuck, Feb 2, p 13\*  
 Taps, Apr 6, p 7\*  
 Pressed Steel Car Company, Jan 19, p 30; Feb 2, p 41; 9, p 5; Mar 2, p 16; 30, p 2; Apr 13, p 9; 20, p 20  
 Presses:  
 Adriance inclinable open back, Mar 30, p 1\*  
 Bliss:  
 Armature disk, Apr 13, p 8\*  
 Inclinable power, Mar 9, p 1\*  
 Special with electric motor, Feb 9, p 13\*  
 Pressure and speed governor, Dean, June 1, p 4\*  
 Pressure regulator, D'Este & Seeley air spring, May 25, p 6\*  
 Price cards, Roots', Mar 16, p 43  
 Prices:  
 Advancing, Mar 30, p 40  
 Boom of 1879-80, Mar 23, p 12  
 Bridge builders and the prices of materials, June 1, p 2  
 Consolidations and prices, Apr 6, p 17  
 Hardware prices, Delivered, Feb 9, p 41  
 Jobbers, Mar 23, p 46  
 Prices getting too high, May 4, p 16  
 Profits and prices, Mar 16, p 17  
 Rubber goods higher, Apr 20, p 41  
 Timely caution, May 11, p 16  
 Printing by means of Roentgen rays, Feb 9, p 1  
 Pruning shears, Henry Mfg. Company, Apr 20, p 53  
 Puddling and finishing mills, New scale, June 15, p 19  
 Pulley molding machine, Mar 9, p 11\*  
 Pullman sold, Jan 12, p 13  
 Pump rods, Deep well, May 18, p 14  
 Pumping engines:  
 Record breaking high duty, Mar 30, p 9  
 Riedler, for Niagara, Apr 27, p 1\*  
 Pumps:  
 Hartford water motor, Feb 23, p 13\*  
 Manistee air, Apr 27, p 1\*  
 Molding machine for steam pumps, Mar 23, p 1\*  
 Myers', Jan 5, p 54\*; Jan 19, p 2\*  
 Nash triplex pump and gas engine, Apr 13, p 10\*  
 Perfection water elevator and purifying pumps, Apr 6, p 44  
 Quincy steel pump and tubing, Jan 5, p 49  
 Punch and rivet set combined, Mar 9, p 49\*  
 Punching machines:  
 Doty, Combined with shear, Feb 16, p 11\*  
 Niagara power, Mar 16, p 15\*  
 Rudolphi & Krummel, Mar 16, p 11\*  
 Puritan Coke Company, Pittsburgh, Jan 12, p 33  
 Pyrometer, Brown, Apr 6, p 10\*  
 Q.  
 Quereau, C. H., The Allen valve for locomotives, May 25, p 4\*  
 R.  
 Railroad building, Restriction of, Mar 23, p 13  
 Railroads:  
 Erie, Coaling station, Apr 13, p 1\*  
 Receiverships of 1898, Jan 12, p 10  
 Trans-Siberian Railway, June 1, p 19  
 Rails:  
 Production of Bessemer, Mar 2, p 2  
 Russian contract, Apr 13, p 18

Randolph & Clowes moving from Nauvaton Valley, Mar 16, p 32  
 Rat trap, Dead-easy, Jan 5, p 52\*  
 Ratchet, Buckeye steel fence, Mar 9, p 52\*  
 Ratchet counter, Veeder, May 4, p 50\*  
 Razor, Ran-Tan-Ka-Rus, Apr 13, p 45\*  
 Razor paste, Apr 20, p 54\*  
 Recharging device, Storage battery, Apr 27, p 43\*  
 Refrigerators:  
 Improved American, Feb 9, p 50  
 Manila, Proposed erection at, Feb 2, p 5  
 Reitz, W. C., Dinner to, Jan 26, p 48  
 Reloading tool, June 15, p 48\*  
 Republic Iron & Steel Company, Apr 6, p 18; 13, p 30; 20, p 28; 27, p 18; May 18, p 10; June 1, p 28b  
 Retailers, (See Hardware merchants.)  
 Richards, F. H., The conditional nature of patent property, Apr 13, p 13  
 Rivet set and punch combined, Mar 9, p 49\*  
 Riveters, Peerless hand, Jan 26, p 51\*  
 Ritter, J. H., Address at Philadelphia, Jan 26, p 39  
 Roads, Steel wagon tracks, May 25, p 24  
 Roberts, C. S., Mar 23, p 17\*  
 Roberts Hardware Company, Apr 6, p 41  
 Robins belt conveyor, Apr 20, p 12\*  
 Rockefeller ore interests, May 11, p 12  
 Roentgen rays, Manifold printing by means of, Feb 9, p 1  
 Rogers Screw Company, Mar 9, p 40  
 Roller bearing, Hyatt, Feb 23, p 12\*  
 Rolling mill engines, German, June 8, p 8\*; 15, p 6; 22, p 8\*  
 Rolling mill fly wheels, May 18, p 4\*  
 Rolling mill scale, Western, Apr 20, p 14  
 Rolling mills, Observations of an American engineer, Mar 30, p 4  
 Rolls, Design of roughing, Mar 16, p 2\*  
 Root's price cards, Mar 16, p 43  
 Rope, Wire, Jan 19, p 8; Mar 2, p 15\*  
 Rope drive, Two thousand horse-power, Mar 2, p 13\*  
 Rowe, W. H., Mar 23, p 19\*  
 Rubber goods, Advance in price, Apr 20, p 41  
 Rubber consolidation, Jan 26, p 2  
 Rudolphi & Krummel punching press, Mar 16, p 11\*  
 Russell & Erwin Mfg. Company, Mar 30, p 44  
 Russian iron industry, June 29, p 20  
 Rust preventive, Mannocetin, Mar 16, p 46

## S.

Safe, Testing manganese steel, Mar 23, p 9  
 Safe breaking as a fine art, Jan 12, p 10  
 Safety Emery Wheel Company's machine for grinding plows, &c., Mar 30, p 3\*  
 St. John Iron and Hardware Association, Jan 26, p 46  
 St. Louis Founders' Association, May 25, p 15  
 St. Louis tapping machine, May 11, p 13\*  
 Salesmen:  
 In a rut, Jan 19, p 40  
 Jobber's salesman's relations to his house, Jan 12, p 44  
 Judgment and discretion, Apr 27, p 37  
 Kindness and courtesy, May 18, p 50  
 Loyalty of, Feb 16, p 57  
 Money matters, Feb 2, p 53  
 Oldest hardware traveler, Jan 12, p 45\*  
 Other hindrances, Mar 23, p 45  
 Samples and their value, Apr 13, p 38  
 The buyer out, Mar 9, p 41  
 Trade's opinion of, Apr 27, p 36  
 Traveling expenses, June 15, p 40; 22, p 37  
 (See also Business methods; Hardware merchants.)  
 Sample holder, Klondike, Feb 23, p 47  
 San Francisco News, (See Pacific Coast news.)

Sargent, G. H., President of New York Hardware Club, Mar 30, p 42\*

Sash pulley, Fox No. 5, Apr 6, p 47\*

Saw blades, Butcher, in coils, May 4, p 49

Saw frame, Adjustable, Mar 30, p 48\*

Saw handle, Neverslip key hole, Feb 9, p 50\*

Saw sharpening machine, Jan 19, p 13\*

Saws:

Adjustable compass, Mar 30, p 50\*

Disston, Mar 16, p 46; Apr 13, p 45\*

Goodell power hack, Mar 2, p 15\*

Universal power hack, May 4, p 6\*

Scale, Wage. (See Wages.)

Scales:

Device for manipulating, Jan 19, p 12\*

Pelouze, Jan 12, p 53\*; Apr 6, p 48\*

Schoen Pressed Steel Company and Fox Pressed Steel Company, Consolidation of, Jan 12, p 31

Seoville, W. L., Store window washing, Apr 20, p 37

Scrap iron trust, Feb 23, p 16

Screen doors, Phillips style, Jan 12, p 51\*

Screw driver bits, Samson, May 4, p 50\*

Screw drivers:

Dandy, June 1, p 43\*

Samson, Feb 16, p 58\*

Seythe stone, Gem corundum, Jan 5, p 53\*

Seaman, J. S., May 25, p 31\*

Seaming machines:

Niagara double, Feb 2, p 14\*

Rudolphi & Krummel, Mar 30, p 8\*

Search, T. C., Spanish-American commerce, June 15, p 3

Seasoning wood by electricity, Feb 23, p 7

Sennett rocking grate, Mar 23, p 5\*

Separator, Hutchison steam and oil, Feb 16, p 8\*

Shaft key seater, Burr portable, Apr 6, p 12\*

Sharpening machine, Universal, Jan 5, p 49\*

Shearing machines:

Bertsch universal plate, Jan 5, p 17\*

Doty, Combined with punch, Feb 16, p 11\*

Sheave, Wilcox, Crittenden & Co., Feb 2, p 16\*; 23, p 47

Sheet mills scale, June 22, p 6

Shelby Steel Tube Company, Mar 30, p 5

"Shelby three" trolley pole, Feb 9, p 7\*

Shelf boxes, Heller's steel, Jan 19, p 44

Shells:

High explosives in, Feb 23, p 8

Primrose club, Feb 9, p 51

Shepard, Sidney & Co., Jan 26, p 49; Mar 9, p 44

Sherrill's hardware store, Arrangement of, Mar 9, p 43\*

Shiffler Bridge Company, Apr 6, p 30

Shingler, An English, Jan 26, p 17, Sup

Shipbuilders' consolidation, Mar 23, p 35; 30, p 31; Apr 20, p 28; 27, p 1

Shipbuilding:

Allied industries and shipbuilding, Apr 27, p 16

American, 1898, June 20, p 7

British, in 1898, June 1, p 22

Growth of ocean commerce, Jan 19, p 15

Naval vessels, Progress of building, Apr 13, p 10

Russian, Apr 13, p 18

Shipping:

Great Lakes and the iron trade, May 4, p 8

Lake gossip, Apr 6, p 11

Ocean shipping and the export trade, Jan 12, p 3; 19, p 15

Shipping bounties in France, Failure of, Feb 23, p 17

Shoenberger Steel Company, Mar 9, p 36

Shop floors, Method of laying brick, Mar 16, p 31

Shovels, Kohler anti-combine, Mar 16, p 46; Apr 20, p 53

Shrapnel and fuse, Specifications for, Jan 19, p 20

Stickels & Nutting Company, Mar 23, p 47

Silver production, United States, 1898, June 22, p 6

Simonds Mfg. Company, Jan 26, p 47

Slabbing mill of Illinois Steel Company, June 29, p 1\*

Slag cement manufacture in Alabama, Mar 30, p 34

Slicer, Racine, May 25, p 51\*

Smith, E. J., Industrial combinations, June 29, p 34

Smith, J. L., June 8, p 30\*

Smoke, Soft coal nuisance, June 15, p 18

Smoke preventer, Lowe, Jan 12, p 8\*

Smythe, W. G., Hardware trade in the United States, June 8, p 42

Snaps, Billings' improved, Jan 12, p 51\*

Snips, Berlin forged handle, Jan 19, p 46

Snoqualmie Falls Power Plant, Washington, Jan 26, p 8

Snow, W. A., & Co., Apr 6, p 44

South American Iron Works, Apr 20, p 8

South Dakota Retail Merchants' Association, Mar 30, p 38

South Chicago Furnace Company, Mar 30, p 34

Southern Hardware Jobbers' Association, Mar 30, p 39; Apr 20, p 39; May 25, p 46; June 1, p 39; 22, p 38

Southern Indiana Retail Hardware Dealers' Association, May 11, p 40; June 8, p 41

Southington Cutlery Company, Jan 5, p 49

Spalding policy, Jan 5, p 43; 12, p 38; 19, p 38; Feb 2, p 50; Mar 30, p 40; Apr 27, p 40; May 4, p 44; 11, p 40; 18, p 51; June 1, p 40; 15, p 39; 29, p 45

Spang-Chalfant Company, June 15, p 24

Spanish-American commerce, June 15, p 3

Speculation in industrial stocks, Jan 26, p 19; Apr 13, p 15; June 8, p 15, 30

Speer, C. E., Hardware expansion, June 22, p 47

Spelter production, World's, 1896-98, Mar 16, p 19

Spike, Diamond, Feb 23, p 3\*

Spoke and handle lathe, Defiance, May 18, p 7\*

Spousel hardening apparatus, June 8, p 12\*

Spoon guard, Zenith, Apr 13, p 45\*

Spoons:

Astoria design, Apr 20, p 58\*

Niagara ice cream soda, Apr 6, p 46

Sportsmen's Exposition, New York City, Feb 23, p 44; Mar 9, p 40; 16, p 44

Sprayer, Gould's Kerowater, Mar 9, p 52\*

Springfield oscillating surfacer, Feb 9, p 1\*

Springs, Economy bolster, Jan 19, p 46

Standard Chain Company, May 25, p 49

Standard Oil Company enter incandescent light business, Apr 13, p 30

Standard Metal Company, Apr 27, p 33; May 4, p 19; 25, p 40

Standard Underground Cable Company, Pittsburgh, Mar 2, p 15

Stanley Rule & Level Company, Jan 5, p 47

Staple puller, Wire fence, Mar 16, p 48\*

Steam condensing plants, Central, Apr 20, p 3\*

Steam pump molding machine, Pridmore, Mar 23, p 1\*

Steamship brake, Czvetkovich, Mar 16, p 15

Steamships:

American, Largest built, Mar 2, p 5

Five hundred-foot lake vessel, June 15, p 2

Line direct to Northern Russia, Jan 26, p 48; Apr 6, p 41

"Oceanic," Jan 19, p 2

Steel:

Carbide of silicon, Use of, June 22, p 5

England's export trade, Feb 16, p 6

Influence of arsenic on the mechanical properties of steel, Apr 13, p 5

Steel (Continued):

Manganese in the acid open hearth process, Mar 30, p 13

Nickel chromium and silicon steels, Special, Feb 2, p 6; 9, p 10

Time of testing, Jan 12, p 2

Treatment of tool steel, Mar 16, p 11

Weight of steel sheets, Mar 30, p 34

(See also Iron.)

Steel amalgamation (See Iron and Steel consolidation.)

Steel production:

Argentine Republic, Mar 23, p 7

Bessemer steel ingots, 1898, Mar 2, p 2

Decade of progress in reducing costs, Mar 2, p 6

England, 1898, Mar 23, p 4

Open hearth, 1898, Mar 30, p 2, 16

Sheet steel vs. brass, Mar 30, p 19; Apr 6, p 34

Swank's 1898 figures, May 25, p 28

World's consumption of pig iron in the steel industry, June 1, p 14

(See also Iron production.)

Steel girders burned by an electric arc, Mar 30, p 3

Steel track wagon roads, May 25, p 24

Sterilizer, Waterhouse-Forbes, Mar 16, p 49

Stone, E. E., Mar 23, p 20\*

Store window washing, Apr 20, p 37

Stores:

Department, How to compete with, Feb 9, p 46

Sherrill's, Arrangement of, Mar 9, p 43\*

Stove boards:

Aluminum finish, Apr 27, p 46\*

Antique coppered steel, May 11, p 47\*

Stove makers' consolidation, May 18, p 38

Stove pipe elbow, Perfect one-piece, May 11, p 48\*

Stove trade:

Advance in prices, Mar 16, p 7

United States statistics, June 20, p 14

Stover Novelty Works, June 8, p 5; 22, p 7

Straits Settlements and Java as they appeared to an American manufacturer, May 4, p 45

Strikes:

Building trade, Chicago, Apr 27, p 17

Iron miners', Apr 6, p 30

Liability of cities, Feb 23, p 18

Molders', at Chicago, May 25, p 29

Studding, Nailable iron, Mar 23, p 6

Stupakoff comparometer, Apr 6, p 14\*

Sturtevant electric fans, Special types of, Jan 19, p 9\*; Feb 9, p 9\*

Supplee, W. W., Testimonial banquet to, Jan 26, p 38\*, 42, 45

Surface gauge, Sawyer, Feb 9, p 52\*

Surfacer, Springfield oscillating, Feb 9, p 1\*

Susquehanna Iron & Steel Company, June 1, p 13

Swinburne, James, The Nernst electric light, Mar 9, p 18

Swing, Kingman steel, June 1, p 45\*

## T.

Tack hammer and puller, Billing's, Jan 12, p 53\*

Tack puller, Grant, Feb 2, p 56

Tacks, Revised price-lists, Jan 19, p 34

Tanite Co.:

Emery grinder, Apr 6, p 13\*

Polishing lathe, Apr 6, p 13\*

Tapping machine, St. Louis, May 11, p 13\*

Taps, Pratt & Whitney, Apr 6, p 7\*

Tariff:

Cuba, Jan 5, p 18

Drawback decision, Jan 16, p 17

Hawaii, May 4, p 12

Making a club of the tariff, June 1, p 16

Porto Rico, Jan 26, p 16; May 4, p 12

Trade, trusts and tariffs, June 15, p 13, 17

Wire rope, Jan 19, p 8

Taxation of productive industries, Excessive, Mar 9, p 15

Taylor, T. H., Mar 23, p 20

Telephone book holder, Tatum's, Mar 9, p 49\*

Telephone vs. telegraph, Apr 13, p 12  
 Telegraphy, Marconi's wireless system, Apr 13, p 3; 20, p 9,\* 16  
 Templates, New method of boring, milling and tapping machine frames, Jan 26, p 3\*  
 Tennessee Coal, Iron & Railroad Company's report for 1898, Mar 23, p 24  
 Testing lead tin and lead antimony alloys, May 11, p 12  
 Texas Hardware Jobbers' Association, Apr 6, p 39; May 11, p 39  
 Texas Retail Dealers' Hardware and Implement Association, June 29, p 40  
 Thomas, E., Apr 20, p 43  
 Threads on wrought iron pipe, Defects in, Mar 9, p 13  
 Thuroscope, Bayer, Mar 30, p 48\*  
 Tie plate, Oliver steel, Jan 26, p 13\*  
 Time recorders, Chicago, Apr 27, p 14  
 Tin plate production, American, Apr 6, p 19  
 Tin plate scale of wages, May 25, p 31; June 15, p 11; 29, p 21  
 Tone, F. J., Carbide of silicon, June 22, p 5  
 Tool brackets, Herrick's, Feb 2, p 57\*  
 Tool rack, Herrick's, Feb 2, p 57\*  
 Torches, Queen brazing, Feb 2, p 61\*;  
 Apr 6, p 46\*  
 Trace holder, Safety, June 1, p 44\*  
 Trade:  
 French colonial, Jan 19, p 5  
 Rio Grande do Sul, Brazil, Apr 27, p 12  
 Spanish-American commerce, June 15, p 3  
 U. S. and new colonies, Mar 2, p 20;  
 Apr 13, p 10  
 (See also Export trade.)  
 Trade catcher, A., Apr 20, p 38\*  
 Trade, trusts and tariffs, June 15, p 13,  
 17; 22, p 16, 18  
 Trade winning methods, May 4, p 42;  
 11, p 42; 18, p 48; 25, p 48; June 8,  
 p 47; 15, p 43; 29, p 43  
 Transformer design and operation, Jan  
 5, p 16  
 Transom lifters and openers, Dickson,  
 Apr 6, p 44  
 Trans-Siberian Railway, June 1, p 19  
 Trap, Egan inverted valve steam trap,  
 Apr 6, p 12\*  
 Traps, Animal, May 4, p 50\*  
 Tree guard, Ohio anchor, Feb 2, p 58\*  
 Trolley pole, "Shelby three," Feb 9, p  
 7\*  
 Trouser rack, Yankee, Mar 9, p 50\*  
 Trowel, Avery forged steel, May 4, p  
 50\*  
 Truck, Fisher automobile, Jan 26, p 9  
 Trusts:  
 Capitalizing our supremacy, Feb 16, p  
 16  
 Combinations and trusts, June 29, p  
 47  
 Duty of great consolidations, Mar 9, p  
 15  
 Fixed charges and consolidation, May  
 18, p 20  
 Indiana anti-trust decision, June 15,  
 p 5; 22, p 15  
 Industrial combinations, Mar 23, p 12;  
 June 1, p 10; 22, p 15; 29, p 34  
 Industrial commission to investigate  
 trusts, Apr 13, p 12  
 Industrial organizations, Strength of,  
 May 4, p 16  
 Law and industrial combinations,  
 June 22, p 45  
 Manufacturer's view of consolida-  
 tions, Mar 16, p 44  
 Michigan anti-trust law, June 22, p 4  
 Passing of the personal in business,  
 June 1, p 39  
 Pennsylvania anti-trust legislation,  
 June 29, p 10  
 Prices and consolidations, Apr 6, p 17  
 Reduction of expenses by consolida-  
 tions, May 25, p 27

Trusts (Continued):  
 Regulation by law, Jan 12, p 16  
 Texas anti-trust law, June 8, p 20  
 Trade, trusts and tariffs, June 15, p  
 13, 17; 22, p 16, 18  
 (See also, Brass; Copper; Wire, etc.)  
 Tube consolidation, June 1, p 18  
 Tumbling valve, Henderson steam  
 heated, Jan 5, p 16\*  
 Tuyere, Copper blast furnace, Destruc-  
 tion of, Feb 16, p 13\*  
 Tyler Charcoal Iron Tin Mills, Apr 6, p  
 30  
 Tyler's wire specialties, Mar 9, p 49\*  
 U.  
 Umbrella stands, Venetian, Apr 27, p 42  
 Union Malleable Iron Company, Mar 30,  
 p 8  
 Union Steel & Chain Company, Apr 27,  
 p 29  
 United States Cast Iron Pipe & Foundry  
 Company, Feb 9, p 22; Mar 30,  
 p 31  
 Urquhart oil injector, Apr 13, p 11\*  
 Utilization of furnace gas for power,  
 June 29, p 6, 19  
 V.  
 Vail, J. H., Cooling tower and condenser  
 installation, Feb 2, p 1\*  
 Valve, Allen, for locomotives, May 25,  
 p 4\*  
 Ventilator, Perfection, May 4, p 49\*  
 Vises, Lewis quick-acting, Mar 30, p 49\*  
 Vogt, C. A., Mar 23, p 21\*  
 Vollkommer, Josef, Enameling as an in-  
 dustry, Mar 23, p 10  
 Vrooman furnace arch brick, Feb 9, p  
 5\*  
 Vulcan chain pipe wrench, Apr 13, p 12\*  
 W.  
 Wages:  
 Amalgamated Association scale, May  
 25, p 13  
 Carnegie Steel Company, Apr 6, p 31  
 Coke workers, Advance, May 4, p 20  
 Conferences, June 8, p 7, 20  
 Molders' wages advance, Mar 23, p  
 4, 11  
 Puddling and finishing mill scale, June  
 15, p 19  
 Rolling mill scale, Apr 20, p 14  
 Sheet mills scale, June 22, p 6  
 Tin plate scale, May 25, p 31; June 15,  
 p 11; 29, p 21  
 (See also Labor.)  
 Wagon roads, Steel track, May 25, p 24  
 Wagons:  
 Ideal buggy, June 1, p 45\*  
 Steel, Apr 27, p 42\*  
 Walkley, W. R., Address of, June 22, p  
 43  
 Wanner, Cast iron pipe and consolida-  
 tion, Apr 13, p 8  
 Warships:  
 Engines of new cruisers, May 18, p 12  
 Feed water regulators on ships, Mar  
 16, p 6\*  
 Old type of monitor, May 18, p 22,  
 Sup.\*  
 Plans of new, Apr 20, p 17; May 18,  
 p 40  
 Torpedo boat "Stringham," June 8, p  
 11  
 Washing machines:  
 Benbow rotary, Mar 2, p 55\*  
 Boss, Mar 9, p 52\*  
 Cyclone, Mar 2, p 54\*  
 Happy Home, June 1, p 43\*  
 Round Western, Mar 2, p 55\*  
 Western rotary, Apr 6, p 46\*  
 Water filter, Champion, Mar 23, p 51\*  
 Water motor air compressor, Worthing-  
 ton, Mar 16, p 9\*  
 Water supply, Brooklyn, Legal decision,  
 Mar 2, p 21  
 Water works construction, Jan 26, p 2  
 Waterhouse-Forbes sterilizer, Mar 16,  
 p 49\*  
 Watson, F. L., Mar 23, p 21\*  
 Wax tapers, Molders', Jan 12, p 33

Weaners, Tyler, Feb 23, p 48\*  
 Weights and measures, Metric system  
 of, Feb 2, p 24  
 Weights of aluminum, steel and copper,  
 Mar 30, p 34  
 Wellman open hearth furnace, May 25,  
 p 16\*  
 Wells & Nellegar Company, Feb 16, p 58  
 Welsh tin plate combination, June 15,  
 p 4  
 Western Electric Company, Jan 19, p 11  
 Western Foundrymen's Association, Jan  
 12, p 15; Feb 23, p 10; Mar 9, p 2  
 Wheat, The damage to, Apr 27, p 17  
 Wheeler, E. C.:  
 Coke and charcoal iron for malleable  
 castings, Mar 30, p 40; Apr 6, p 5  
 Malleable cast iron, Apr 16, p 2; 23,  
 p 4  
 Wheels, Metal, Apr 27, p 42\*  
 Whiffletree hook, Wallace safety, Apr  
 20, p 58\*  
 Whirlpool power, Niagara, Jan 26, p 9  
 Whitaker Iron Company, Jan 12, p 21  
 Wiley, W. H., The old type of monitor,  
 May 18, p 22, Sup.\*  
 Wind mill regulator, Acme, Jan 26, p  
 54\*  
 Window display:  
 Bicycle as a trade winner, May 25, p  
 48\*  
 Locomotive, May 4, p 44  
 Mrs. Santa Claus, Apr 13, p 41\*  
 Tin cypher, Mar 30, p 44\*  
 (See also Advertising.)  
 Window screen, Phenix, Apr 6, p 50\*  
 Window washing, Apr 20, p 27  
 Window weight, Walda improved sec-  
 tional, Mar 30, p 50\*  
 Window locking pivot, Mar 23, p 49  
 Wire charter, The, Jan 19, p 18  
 Wire Cloth Manufacturers' Association,  
 Mar 16, p 43  
 Wire consolidation, Jan 12, p 19; 19, p  
 20; 26, p 33; Feb 9, p 31; 16, p 18;  
 Mar 23, p 15\*  
 Wire forming and staple machine, Sto-  
 ver, June 22, p 7\*  
 Wire gauge, Stubbs' pattern, Jan 19, p  
 46  
 Wire rod production, U. S., 1898, Apr  
 27, p 2, 17  
 Wire rope, Duty on, Jan 19, p 8  
 Wire rope filler, Mar 2, p 15\*  
 Wire straighteners and cutters, June 1,  
 p 13\*; 8, p 5\*  
 Wire trade, Jan 5, p 41; Apr 20, p 15  
 Wisconsin Retail Hardware Associa-  
 tion, Jan 12, p 47; 19, p 41; Feb 9,  
 p 37, 42; Apr 6, p 39  
 Wiseman, H. C., Address of, Mar 2, p  
 45  
 Wittgenstein, Karl, The development of  
 industry in America, Mar 30, p 6  
 Wood, Seasoning by electricity, Feb 23,  
 p 7  
 Wood, W. D., Death of, Jan 12, p 14\*  
 Wood pulley consolidation, Mar 30, p 33  
 Wood trimmers, Oliver, June 29, p 13\*  
 Woodman & Hudson speed indicator,  
 Jan 12, p 13\*  
 Working overtime, Jan 19, p 16; Feb 2,  
 p 25  
 Wrenches:  
 Billings' cam lever, Jan 5, p 51\*  
 Bindley automatic, Apr 20, p 57\*  
 Elgin adjustable, Jan 26, p 52\*  
 Model grip, Feb 9, p 50\*  
 Whiting improved, Apr 20, p 56\*  
 Wrightsville Hardware Company, Jan  
 26, p 49  
 Wringer, Joyner's mop, Mar 2, 56\*  
 Wrist machine, Little Giant, Mar 23, p  
 50\*  
 Y.  
 Yoke, Rogers' new chain, May 11, p 45\*  
 York post radial drill, Mar 2, p 14\*  
 Z.  
 Zinc industry, 1898, Feb 2, p 16  
 Zinc miners of Kansas and Missouri,  
 June 22, p 16

